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THE ETHICS OF REVOLT



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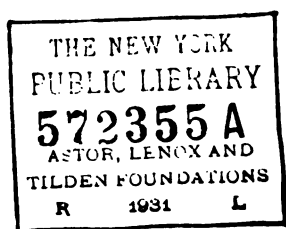
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WITH the exception of "Vivisection and Progress," which appeared in the *Contemporary Review*, June 1905, and for permission to republish which I am under obligation to the Editor, the materials of which this volume is composed have not appeared in print. They are mainly the substance of certain lectures given chiefly to working men in various places ; and the frequent request of my hearers that I should write and publish them is responsible for my doing so.

G. M'D.





THE ETHICS OF REVOLT

I

TRADITION AND PROGRESS

AT a certain point on one of our great southern high roads, beyond the city's vulgar villadom and noble gardens that alike are driving the peasant from his inheritance, we may find a little by-road into a forgotten hamlet. This road is fallen into such poverty that every sort of gentlemanly vehicle instinctively declines it. Only the wayfarer whose expedition is prompted by no desire to get anywhere, and whose boots are either strong or quite soleless, will attempt its forlornness. By its side ascends the new and kindlier road, overshadowed by great beeches and winding in curves that temper the ascent as it makes for the great South Downs. But the little by-road once was the great coach-road ; and it leads not only into a little lost hamlet, but back into centuries, the life of which still abides though their ways are forgotten. The little road, after



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running its leisurely level further than need be, soon rushes to a vigorous ascent, widening into memory of turnpike importance ; and, because of the cruel havoc wrought by skids of the ancient traffic, it is paved with huge, grass-caulked blocks of stone, irregular in shape and size. At the bottom of the hill is the shell of a burnt-out brick-and-timber cottage, almost hidden in ivy and elder-berry blossom, where, we are told by big-eyed children, "Gran'feyther Caesar, wot hadn't got no mother, he hadn't," was accidentally burned while asleep in his bed. A high-banked hedge at its side falls away into a sloping amphitheatre, on the sides of which, tier upon tier, a company of still blossoming foxgloves stand ; they curtsy and bow in gentle approval of things as they be, and take as little account of their magic past as do the motorists swooping down the modern high road above them. Half-way up the terrific ascent, which makes us know that the horses and whips of olden days were great indeed, stands the little inn, strong in black timbers and proud of its naughty god-mother, "The Duchess of Portsmouth." Pride of tradition or ignorance of custom keeps its parlour free of those disorderly lithographs that in most country inns tempt us more certainly to blasphemy than to the whisky they laud ; and the only adornment of its panelled walls is faded samplers of tender, old-world discipline. Relatively modern Sussex chairs, yet now made only



TRADITION AND PROGRESS 3

by the London art-furnishers stand invitingly against the walls, and the low, wide-open leaded windows give on a little brick-walled court into which they used to lead the horses while their masters rested. Out from the side of the hill rushes a brook to fill the great, stone-hewn trough where the beasts drank, while beside it projects from the wall a low slab of stone, at which, we are told, the pack-horses ate their provender. The bakehouse and brewhouse are now disused ; for the new road has taken away the possibility of the old-time independence and brought machine-made food and drink in its place. Still wild roses reach in profusion over the little paved court and scatter their petals into the singing water ; and a kindly hospitality, quite unlike the portentous commercialism that nowadays intimidates the hungry guest, waits upon the villagers, who chat on their benches drinking from pewters and great blue mugs their Sunday beer. These fellows are gentle of face, with the wide brow and blue eye, the strong upper lip and upright carriage, of the Sussex breed. In the newer villages of stucco and slate the people are ever adrift ; but here it is just the same people as of centuries ago. New babies come and the surplus children hurry away—to the army, the navy, the cities, the colonies. Yet the men and women seem quite unchanged and unspoiled, if unregenerate perhaps. They have small ambition to profit by the great world's progress, though the old-time passion for

the peasant's rights still kindles their eyes. They can all tell you of Gran'feyther Caesar, his virtues, his melancholy end—the latter having a certain relish in narration that must not be missed, and that even the four-year-old babblers can thoroughly enjoy. And they talk of the good old days and these bad new ones. Remind them of the awful poverty when the peasants' bread cost a shilling a quartern and wages were nine shillings a week ; when learning could neither be bought nor begged for the children, and a despairing father would be hanged for stealing a sheep ; remind them of the blessings of this day when bread is cheap, if bad, and education is good and free to all, when the law is no longer respecter of persons, even though it be softened for the rich and stiffened for the poor ; and they will yet cling to the old days. Then the dust of the petrol speed did not fall upon them in clouds to ruin their gardens, and Squire lived at the Hall with his own people for servants, and knew all the children by name.

The patriarch of the party, a *Bible Christian*, in smock, with Sunday-shaved chin, snowy white locks and unclouded blue eye, says, with full Sussex burr, he could tell us wuss than we guess of the bad old times ; yet he is not shaken in his conviction that they were better than the new. He is something of a thinker, something of a poet. He minds how, in them times same as now, the tares and the wheat sprang up together ;

but the tares was no wusser and the wheat was longer and heavier. "Why so?" we ask. "'Cause," he explains, "they was sown on the good old soil that God A'mighty made along of Adam and Eve, what has lasted six thousand year, it has, and woan't fail yet awhile, if we doan't use it for what it bain't for, and turn it into smirky little Edens for the town folk to raise pheasants and whet their appetites on, and make flunkies of our lads and wuss of our maids." "But," we object again, hoping to get understanding of this prejudiced old soul, "the soil is the same now as ever it was." "Right again," he replies; "but we sow the seed among thorns, and when it springs up it be choked by the dust of the motors, and not even devoured by the hens as in Scripture; we chuck it on the stony streets, where it has not much earth, and though they's paved with gold, same as the New Jerusalem, you can't get no life out of them seeds, and they wither away. The new ways make money come easy, I dessay, but they doan't make the grain bring forth some thirty, some sixty, and some an hunderd—no, they doan't! And they doan't make it easier for the pore to fear God though they do give him cheap victuals and what you *call* eddication." "But, after all, every man has now an opportunity of bettering himself?" we ask, anxious to make him talk. But the only answer we get is a contemptuous spit of finality. The old man knew and had spoken. We bade



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him good-night, and toiled up the old flagged road till it lost itself in the shadows of the still older beech woods.

Yet we brought away with us something that needed clear thinking before we could attune our minds at once to the truth put before us by the old Sussex peasant, that paving-stones, though they be golden, won't grow wheat, and to the fact that strenuous life means evolution and progress. Is not the spontaneous expression of life in dire danger of losing recognition in these latter days of studied excellence? May it not be that with our minds filled so full of the doings of man we are losing sense of things revealed in the beauty of nature? Is it possible that with our measuring and enslaving of physical forces, we are seeing less of the wonder in things? that, with all our knowledge of life, we are living less sanely? that in our worship of logic we are forgetting our ancient ideals, our trusted inheritance? Such are the questions that come as we remember the deep look of that Sussex peasant's eyes.

We are sure enough, indeed, of the need of progress. Human history, not to mention the suffering of this present time, declares this need in no uncertain note. The revelations of biology, too, leave us no choice but to accept evolution as the means by which life has brought man to pass. Yet the utmost we have attained in the last century of years calls forth many a doubt; while so great is the disaster of our humanity, notwith-

standing the softening influences of an increasing charity, that we can hardly be blamed if we question the worth of the eternal labour. Ever since man began to think, ever since, that is, he began to ask questions, his troubled brow has been a mute appeal for understanding. For he finds himself beset with paradox. There is what he knows to be good and evil, what he somehow would be, and yet what he is. There is life leading onwards, with nought for its goal but arrest to all endeavour. There is life compelling the inanimate world to its uses, and there is the victory of material forces over vital energy. There is, expressed indeed only in these latter days, the inevitable need of progress and together with it a growing conviction that in forgetting the wealth of our inheritance we are losing sight of our aims.

Yet, notwithstanding such paradoxes, we now, as surely as ever in the world's history, instinctively admit a ruling principle in life which is responsible for our being, and to which, it would seem, we are responsible for our conduct. Even where the moral sense has not risen above a realisation of the law of penalty, we must accredit man with some ethical instinct. Abject races, who will insult and punish their horrid fetishes to extort from them larger favours, are yet bearing witness to some principle of life supreme to their understanding. People of nobler mind will offer sacrifices in token of man's duty to relinquish his own food and drink, if may be, in recog-



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dition of a law transcending mundane needs. And those who have learned how men are so bonded together that by every wrong deed the community must suffer, and that by every right one the supreme principle is made manifest : these have found a rallying symbol in the Cross. Even in this age of keen thinking, when the worth of everything is gauged by its material equivalent, and intellect boasts that it has rid itself of superstition ; even in this age, so like all others that have gone before, we are no nearer freeing ourselves of belief in some immanent principle in life. Despite even the impertinences of our text-books and the wet blankets doled out by so many of the churches, there still remains to us the old faith that life is the manifestation of some eternal truth not otherwise to be known than through an understanding of the passions of life : we still have some sense of natural religion. That base superstitions go hand in hand with this higher sense is no justification for decrying its value : they are but degraded modes of expression in degraded people. Whatever outward manifestation it takes, whether in the cruelties of human sacrifice or in the charities of self-abnegation, this sense of a supreme principle in life gives ample evidence of its universal recognition.

But what do we mean by the word *principle* ? It surely signifies in ordinary use something more than a property of matter. We may, of course,

if we please, speak of the principle of attraction accounting for the phenomenon of gravity, or of the principle of repulsion explaining the diffusion of gases. Yet, as matter of fact, the term used in this way is but a mode of stating the facts of matter or of its unalterable behaviour. And, in common parlance, I think we use the word *principle* rather as some *cogent incentive* underlying human conduct. Thus we ask what principle actuates any one in the profession he adopts, and bears him company in its pursuit. In a doctor it may be the love of knowledge or sympathy with suffering; in a financier, desire to live without labour; in a soldier, the love of glory; in a burglar, a too literal appreciation of the natural law that approves the overthrow of the weak; in a parson, a hope that the meek shall really inherit the earth; and so on. In great movements also there is an abiding principle or ideal responsible for their inspiration and evolution. Thus Protestantism means neither more nor less than the conviction that if the gospels are the means of our salvation, they are the gifts to every man, and must be accredited as such without qualification or intellectual restriction, however learnedly the churches may claim an exclusive right to teach the simple-minded, who, Christ Himself declared, understand some things better than the wise. Or again, the churches base their rival claims upon a conviction that their Founder had wisely ordained such means of transmitting His teachings uncor-

rupted through the ages that would come ; and the dogma of the apostolic succession is a principle upon which alone their claims must rest. We find some principle underlying all organised conduct ; and we may well ask what we mean by the principle of life, what there is in our knowledge of life that we can lay hold of as its inspiring and directing force. Life is teeming with paradoxes : ascent and fall, love and conflict, harmony and discord are universal, and have been incentive to the philosopher's unrest ever since the world began. When Cain, having slain Abel, defended his conduct by repudiating as an absurdity the concept that man is his brother's keeper, he proclaimed the eternal paradox that lies fundamental in all our thoughts as to the meaning of life. Most will perhaps declare in one voice that every man must look after himself in this world, and that he is not the less in some measure his brother's keeper ; and because of the paradox they will decline further search for any common principle responsible for both aspects of obligation. But to the philosopher the arrest by paradox is the chief stimulus to thought. If he be intellectually honest he knows that behind every paradox must lie an embracing truth ; he sees that behind all the contradictory phenomena of life will be found an abiding principle. If the law of survival of the fit is justified by the needs of brute force and mental craft in the process of evolution ; if at the same time the philosopher



TRADITION AND PROGRESS II

cannot conceive of man's humanity evolving from lower forms of life where self-abnegation must be inimical to self-interest, he will hardly content himself with the paradoxical notion that one originating principle is the power of evil, the other the power of good. For he hopes that, by using fearlessly all materials offered in his investigation of man's ways and the habits of lowlier things, he may yet discover some lasting inspiring principle in which inconsistency is as impossible as falsehood is incompatible with truth. He foresees that, as the hard and lifeless husks of the grain stand in the way of the new-springing cotyledons that begin the life of the wheat's contest with its environment, quite as truly have these very husks been necessary to the sheltering and protecting of the sleeping seed until its germination begins. I do not, of course, offer this simile as holding any analogy of fact between the seed's growth and the evolution of man ; I merely offer it as possibly holding a philosophic consanguinity, if I may so express it ; for both are dependent upon conditions of life that are seemly paradoxical, antithetic, and yet both are accounted for by the same principle of life that is purposed in all its provisions.

The principle of life can be no other than the power that began life and conducts it through all its varied changes, its failures no less than its advances, consistently and unwaveringly throughout. And it is for the clearer understanding of this



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enlivening principle that all philosophers and men of science labour, however little they may realise that it is a uniformity of law for which they are searching.

Consistently with this seemingly elemental paradox in the ideals of life, we find, dominating all those who work for the world's betterment, one or other of two opposing principles. But for these, warfare against the spiritual stagnation that brings alike worldly success and moral disaster were altogether futile. And these principles divide the workers into two clearly defined classes, which, although they are both actuated by the wider principle of belief in man's possible betterment, have but small sympathy with one another as to the essential meaning of life. We may define the two classes thus :

(1) The first is more deeply imbued with understanding of the wealth and worth of our traditions, and is alarmed at the growing disregard of ideals which, having stood the test of time, rightly claim an origin in eternity. There is no question whatever that certain qualities of life have survived the millstones, have brought us safely to this point, and must accompany us further. And there is no question either that often in our history unworthy greeds and foolish ideals have gained the upper hand and have yet proved ephemeral. Therefore it is most reasonable to put our trust in such things and ideals as have stood the test. This party of tradition is not

popular to-day, and its members are voted visionaries because they would revive the times that are gone, or devote their lives to dogmas that should have been buried with the centuries.

(2) The second class is that which looks upon the past solely as a ladder of ascent, the rungs of which may be most profitably discarded and forgotten as soon as their purpose of leading a step higher is attained. Life is ever moving onwards to larger conceptions of its possibilities. The history of humanity, as of the evolution of species, has been one of contest with the environment, and the outcome has been a growing power of compelling the physical world to serve the needs of life. Thus has the progress of humanity gone hand in hand with the amplification of environment; and man, thanks to his machines and his finance, as he thinks, has found leisure to express in literature, art, and music his deeper consciousness of a meaning in life transcending mere mundane utility. This party of progress is paramount to-day; and while its spirit may yet lead to some consummation beyond our knowledge, it is no less true that the very freedom it offers is fraught with very dreadful dangers.

These two classes are inspired each by its ideal principle—the sense of obligation to man's inheritances, and that of need to discard old restrictions. Their claims lay hold upon us all, though one or the other mostly predominates. They govern, one or the other, almost every action and judgment.



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They are clearly immanent, essential, in life. Indeed, they constitute life. Yet they are ever in conflict. And we stifle our bewilderment by calling them paradoxes.

Before attempting an answer to the question whether it is possible to find a larger principle in life, which, being life itself, necessarily embraces, accounts for, indeed necessitates all its contradictory phenomena, let us see what justice there is in this claim as to the ubiquity of these two cogent principles. And we need not go far for evidence.

Take politics. The Conservatives are the great respecters of tradition, and claim an almost divine origin for the Constitution, forgetting how each bolt that rivetted its stability was, at the time of forging, a new-fangled weapon of progress. But they hate the ease with which youthful enthusiasm will cast aside the old and tried institutions, chiefly because they remember so well the disaster that attends most revolutions and the cold apathy into which most reformations subside. That which has made us, say they, will save us. That which is tried will keep true. Legs have always served the needs of men, why try the wax-welded wings of Icarus? But look at facts, say these Conservatives. The relation of master and servant is ancient and abiding; and if we seek to abolish servitude we deny the truth that society is based upon mutual succour. The contest for survival is ingrain in history as in evolution, and implies

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TRADITION AND PROGRESS 15

an essential inequality in man ; why then do we strive for an ideal of equality that will never bear the test of reason ? In like manner, the fact that one man has, ever since history began, made profit on his fellow's loss, gives the lie to the high-sounding cry of Fraternity. The ideal of Liberty is quite as illogical ; for is not man the slave of his inheritances ? are not his actions, great and small, all instigated by motives of self-interest ?

On the other hand, the Liberals take as their watchword the traditional progress of the people, and therefore claim that new grass must grow over old graves, and that customs which were perhaps good enough when squires were gentlemen and valued their people higher than grouse and deer, will hardly serve to-day. For the education of the people's schools is as good as, perhaps better than, that of Eton ; while the universities and professions are open to all. Every labourer, even in the forgotten village, now knows that Debrett is no recorder of merit, and that the capitalist gets more than fair profit because the worker gets less than fair wage. The poor man because of his poverty is forced still to believe in equality and fraternity, and because of his bonds knows that liberty is something more than a delusive ideal. That society has improved is no justification of many ways of man, though they still survive and are endorsed by the tyrannies of wealth and privilege. The rule of survival of the fit is more likely to prove a hindrance to progress

than a successful means of repressing the needy, while the eternal law of man's dependence upon man has never justified slavery. We must still progress, say the Liberals ; and we shall cease to do so unless inspired by the old ideals of Liberty, Equality and Fraternity. So much for politics.

Again, in matters of birth and parentage, the party of tradition outsteps its argument. Who shall deny that the man born of long lines of virtuous parents is naturally gifted beyond those who are offspring of rascals ? But the aristocracy base their pride not upon nobility of manhood, but upon some chance patent of good fortune or caprice ; and because their genealogy is placed on documental record, forget too often alike the pride and shame of their origin. The traditions of these are not of noble living, but of material success ; and to keep hold on their unearned privileges they must frustrate the world's progress by opposing the people's ideals. On the other hand, the people are too prone to forget the glory of responsibility that comes to them through their parents' suffering and victories ; they forget the time-surviving faith and emotions that anchored the ancient heart of the nation to the land and its valued traditions. They are easily satisfied because they remember little of what they might still know if they would. The traveller by train laughs at the old stage coach, forgetting that his illiterate great-grandfather knew many a priceless

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thing of man's duty and nature's ways, of birds and beasts, of flowers and simples, that speed and change have cheapened for this generation. In the rush through life, with its phantasmogenetic makeshifts and changes, this day's keen man of business realises little of those times when his respectable ancestor lived over his warehouse on the busy quay, and when his and his good dame's lives were welded together by a common interest in business and home. That old-time union brought a sweetness to life quite rare in the merchant class now, when rival interests so often separate husband and wife, and the joy of offspring is weighed against wealth.

But the ideals of faith in tradition and trust in progress encourage the best that is in man. Yet the less worthy, holding firm faith in one or other aspect of the truth, use such faith as excuse for disregarding obligations that seem, because prompted by the other faction, opposed to reason. Each party, grown fat with comfort and small-minded with success, includes in its fold a few whose function is protest. These minorities, usually more consistent in the co-sorting of faith and conduct than the easy-going multitudes, are, because of this fact, justified in demanding at least a hearing, though their protest be inspired by those very ideals which their class has repudiated. Thus the party of progress has its minority which is impelled by respect for tradition to protest against vulgarities and infamies that are



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tolerated only because they seem to be inseparable from progression ; while the party which finds its justification in precedent has also its minority which recognises the need of amending wrongs that have become established because handed down with the traditional and essential virtues. The Church relies upon its traditions, knowing well that without such faith its apology for existence were vain indeed. Yet, even from the heart of its restrictions and contentment, a minority, sometimes waning, sometimes waxing strong, is, in these days as in other times, slowly winning strength to save the Church from a fate daily growing in menace ; for this minority claims that, if the Church be indeed the heart of the nation, she must prove her vitality by a living progress : she must show her faith in her life by freeing herself from the slavishness of bishops and priests who fear to let her live and grow.

On the other hand, we find the goddess of science devoting all her energies to the worship of progress. We find her followers, children and lacqueys alike, so zealous that they discount the cherished traditions of men. "Have done," cry they, "with religions and superstitions and witchcraft. These have been holding back the progress of man. Let us feed the people with stouter food ; let us give them purer air ; let us teach them hygiene and physiology. Then a fitter progeny will be bred, and the race rush onwards

in its ever-enlarging conquest of environment to grow in stature and wealth and moral virtue." And they would discipline the homely gods that for so long have swayed and moulded the nature of man. The virtues of sex-love and child-love must be regulated by the science of cross-fertilisation and the experience of the breeder, while friend-love is qualified by social exigencies. Yet these ancient virtues are of such strange and anomalous power in the human heart and its evolution that their truest possessors grow happy in giving their life to the sacrifice. Nevertheless, some also of the science-world are nigh mad with horror at the awful growth of this demon called progress, this juggernaut-car beneath whose wheels the eternal traditions are mangled. Among these is the better understanding, though certain reformers of progress rush to the other extreme, and find hope only in futile attempts at reversion ; they join the other party. "Back let us go," they say, "to those simple days, before steam had blinded man to beauty, before hunger for gold had devoured the old-time rights in service. Painters are forgetting the traditions of art ; writers are scorning the ancient sincerity ; doctors in the progress of science are forgetting the appeal of suffering ; increase of possession is blinding the people to the glory of liberty." And this suffering, impatient minority would turn the course of the world back again to its beginning with a new commandment : Thou shalt not

subdue the earth, nor unbury the coals that are hidden therein, nor enslave the waters that rush from her heights, nor chain the lightnings that scatter thy flocks. Thou shalt not use them nor covet them, lest they take from thee thy ancient gift of labour. With the sweat of his brow alone can man reap the good of the earth ; and in serving shall he find his reward.

How, then, we may well ask, after reviewing the dangers that beset the followers of both ideals, shall we find virtue in them, or expect that a common principle of life will be found to include and necessitate their paradox. We see how tradition is made indeed a stumbling-block to life ; for unless its devotees grow in strength as they worship, the life falls first into ease and apathy, and then becomes parasitic and belies its immemorial faith. We see no less clearly how those, who rush onwards eager for winning new victories to enlarge the life in material and intellectual possessions, are in danger of defeating their very object because they look upon the traditional law of labour as a curse, old-time humanity as weakness, reverence for ancient ways as engendering poverty of spirit. We see also certain moving spirits on the side that venerates tradition urging the people to progress, and those on that of advance reminding them that in forgetting their past they are in danger of missing their goal.

How shall we meet these conclusions ? How can two antitheses both be true and yet be partly



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false? Is it possible to find, we ask again, a common principle in life that shall cover all the strange phenomena that confound our notions of what must be true? That it is necessary to do so, that it is necessary in general to understand, must be conceded, lest we deny the whole claim of education. And what is necessary is always possible. It is, moreover, necessary if only that we may find more strength of action in our faiths. Strength is won only through an understanding of the weakness that brings doubt into its counsels. And if the admission of an all-embracing principle allows the followers of progress and the disciples of tradition alike to understand the ill success of their endeavours, the search for such principle is indeed necessary; more, its discovery is possible.

Most people when confronted with a paradoxical difficulty settle it, or think they do so, by affirming that the truth lies between two extremes. They argue as if at the extremes the opposing ideals had greatest force, and that, as they approximate each other, they lessen in power until, joining hands, they cease to be enemies. This sounds pretty. But if we allow the simile we must be allowed its logical conclusion, which is this, that the two can only be friends by giving up entirely their opposing claims, and that thus will their individuality and vigour be sapped, their reason for existence ended. The opposing ideals of tradition and progress, though seemingly in

opposition to one another, are, we have seen, the very inspiration of the people; so that we dare not allow one ideal to nullify the other. Nor can we allow that the truth lies between the two extremes when we find it in full vigour only at these extremes. Compromise will here be as disastrous to life as the making of terms between virtue and vice must be to religion. We cannot spare one feeblest ray of sunshine, though it darken the flames of our candles; we cannot spare our rushlights, if they help us to see in dark caverns. Still less if the truth shine with equal splendour on different aspects of the land, showing on the one hand rich lowland pastures and on the other torrent-riven ascents, dare we think the revelations of truth contradictory. If the flame is to burn and inspire the life of man, he will not willingly damp this light with compromises, compoundings, or hush-moneys, not even to gratify his intellectual mania for curbing youthful enthusiasms and belittling their import. The real philosopher will face his paradoxes as essential equivalents in discovering the truth.

Let us, then, if only for the sake of emphasising our faith in our paradoxes, attempt a definition, even though it prove no more than the stating of a truism. Truth is never trite and beauty never worn: not though mind grow weary of seeking, and emotion sad in hope. And to present the truth once more, however obvious, and in concise form will perhaps be pardoned. So let the defini-

tion stand thus. *The principle of life is no other than the tradition of life, a tradition, however, that has no vitality save in its determination of progress.* Life has never come to be what it is save in virtue of its mighty possibilities forever springing into form and beauty. Life will never be greater save in the unfolding virtue of its inheritance. Life had never achieved aught save for the power of its greater possibilities. Tradition and Inheritance, Progress and Reform, stand in no opposition to one another: they are life in memory and adaptation, but yet as inseparable from life as gravity from matter.

We do most profitably as well as reverently dwell upon the things of the past if they have survived unto this present and are still making for our further enlightenment. Thus we truly learn of archaic forms, if the spirit inspiring those forms is so obvious in them that we find it living in ourselves and know that it must, if we are to do good work, inspire us also. But we dare not misunderstand. We dare not mistake the outward and visible for the inward and spiritual. We dare not think that the mere repetition of archaisms will serve any purpose but that of idolatry: it will inevitably stultify our minds by the assumption of a merit we do not possess. The mere imitation of the technical shortcomings of olden days will take from our work its justification—the inspiration of truth. It will make us affected and self-satisfied; and our work will

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belie our endeavour. So much will be conceded as regards handicrafts, art, and literature.

And in social progress the principle of work cannot be otherwise without courting disaster. The study of the nature of life, the understanding of the ever-increasing possibilities in life, can have no other basis than an historic realisation of the inheritance of life. The principle by which life has come to be what it is must carry it onwards dominated by the same vitality. For with life, being and increase of being are inseparable qualities. Indeed, they are, I repeat, the same quality, for they are life indivisible. As matter cannot be divorced from gravity, so life cannot be dissociated from either its inheritance or its progress. Life is its own principle. Seek progress by casting aside tradition, and progress is stayed : the life must sleep. Claim that the life shall live solely upon what it has won, that, past virtues being greater than present sins, it shall revert to ancient ways, and the soaring wings will weary : the life again must sleep. The wealth of our inheritance is not measured by our successes, nor, we may hope, are the possibilities of progress encompassed by the poverty of our poor ideas as to what progress implies. That untold resources lie dormant in every being is the teaching of the modern theory of heredity. Weismann's captivating revelations have emphasised our right to believe in the immeasurable possibilities of our inheritance. And these possibilities, lying dormant and in danger of sleeping on into death,

are still ready for awakening into vigour as soon as the fairy wand shall find them. Every true teacher of child and man must know this. Weismann, little dreaming, we may suspect, the magnitude of his investigations, has one great lesson for our encouragement : every human soul, so far from its life being circumscribed by the limitations of the flesh, is controlled only by the infinity of its inheritance. Every gift of ancient parentage has contributed to our evolution ; and each soul is an epitome, to use Haeckel's potent phrase, of the process of that evolution. Our forgotten simplicities of life, our forgotten possibilities of joy in life, our forgotten trust in the eternal progress, our forgotten consciousness that all our equipment comes from a divine inheritance, may be awakened to life and inspiration once more by the kiss of the mother, the teaching of the master, the voice of the prophet. Our sleep is, thank God, not all peaceful ; and we sickly babes cry out as we sleep for some one, we know not whom, to kiss us awake. Among the teachers and lovers of their kind are some in whom the seeing of humanity's vast inheritance is always awake. These are the voices in the wilderness, in the prisons, in the plague-ridden cities, that bid us repent, for we have not found our inheritance, or, finding, have drugged it into sleep deeper than its evolutionary slumber. These are the men of genius who teach, the saints who serve, the martyrs who give all for the truth, because they know more than they can tell of traditions older

than time, more potent than progress. The greater the wealth of his inheritance, the truer the voice of the prophet's cry for progress. Because he is only what has been, he understands the life that must yet find its justification. He, too, has infinite hope ; because, as if following the teachings of science, he knows that the evil of this as of other days survives not the sleep of the ages. This sleep is death to the false, but a cherishing care to the true. And it is the consciousness of the truth and man's need of its inspiration that the great poet, great singer, great painter, great scientist calls into resurrectional vigour.

No spirit of progress can find strength of limb unless that strength is built upon the eternal truth. The fretful clamourings for money and ease are but mockeries and moonlit ghosts that lead to destruction. They are the utterances of progress starved ; they are but ambition, the babe grown sick unto death because weaned from the milk of its true inheritance. "The Lord is King, be the people never so impatient," sang the psalmist ; and truth is the ruling power, is our ancient religion, is our only means of work. Our impatience divorces our souls from the eternal needs ; our weariness, in striving against our means of life, takes from us faith in those needs ; our starvation brings acquiescence in death. We grow faithless because we forget our ancient humanity ; we grow lazy because we will not believe in the power of life to grow.



II

THE EVOLUTION OF THE CRANK

(i) THE LAW

WHATEVER the outcome of our philosophies and searchings for truth—whether in the distant future man will decline to speculate upon the unknowable, or will yet discover in natural phenomena justification for his spiritual ideals—one fact remains fundamental in our thoughts. This fact is the reign of law, changeless and undying. Under its dominance not only does man live, but he works and hopes, he thinks and remembers, he feeds his body and disciplines his mind. Every student of life, moreover, is searching for evidences of purpose or principle in this law. And of all creation Man, with his fashions and systems, his follies and philanthropies, is the chief, because the most elaborate and illuminating exponent of the law. The voluptuary may claim that he is enslaved to passions for which his nature and not himself is responsible. The ascetic who, as if to exonerate God, blames the devil for all the sins of the flesh, holds, nevertheless, that

freedom of will is the very essence of morality. Yet neither sinner nor saint can question the upholding law in its manifestations of vital and physical co-ordination. Even though nature be the bugbear of priests, its study is the labour of scientists, the hope of statesmen, the inspiration of poets. And the operations of its law, be they the outcome of purpose and need, or merely unreasoned manifestations of force leading from nothing to nowhere, are regnant within us, accounting no less for our sins against its majesty than for our desires to advance what we conceive to be its highest possibilities. Despite its constant failures—for to our understanding, limited to observations and experiences, the law has not yet proved its omnipotence—the sum of its workings is advance in structure and function, increase of purpose and subjugation of environment. Man is but an exponent of the law ; he is its slave or its free-willed agent, or may be both together. Whichever part he plays, the operations of the law seem to have definite ends in view. In the humbler forms of life this purpose, even if manifest only in the surmounting of environmental difficulties, is probably the main factor in evolution ; while in man the subservience to purpose in life, together with the fulfilment in some degree of such purpose, is apparent to any who seek it, notwithstanding the perennial tyranny of failure. The evolution of species may seem no more than a process of victorious self-



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seeking and cruelty, a justification of bloodshed and craft ; yet man has been evolved with something of purpose, something of humanity in his life, either because of, or in spite of, this very process of his creation. Human history is perhaps a no less terrible record of the tyranny of the strong over the many whom it forces into an increasing inefficiency, yet do we present a saner vindication of the law than can be understood from burrowing in the dregs of our failures. If Man has purpose, he has freedom of will : thus he holds responsibility in the Law's fulfillings. If he be not free-willed and holds no such responsibility, the purpose, which I say is obvious enough in men's actions, is the prerogative solely of the Law, and implies Will in its operations. And if either alternative is true, the other may be.

Now, although this law must be accounted changeless and inexorable, in no way is its power more manifest than in its ordering of liberty as the ideal of life : albeit an ideal that, while making fortitude possible in the inspiration of hope, and ever leading onwards in the realisation of widening desires, yet is in itself never attainable. The whole story of the evolution of species and education of Man is one of emancipation from the thralldom of circumstance, and yet of the adoption of widening environments that, in their turn, create new and inexorable obligations. This freeing from the trammels of life, this seeking of wider opportunity, is something more than a

fight against starvation and extinction. Were it but the struggle for survival, the steady upgrowth of species were hardly accounted for. Throughout this story is proclaimed the tendency in all life to variation, to revolt, that is, from the type and its restrictions. The significance of the fact is expressed differently by the two chief schools of biology. The more orthodox claim that whenever any variation, however produced, happens to be advantageous in the contest for survival, the individual exhibiting it is inevitably selected as being therein fitter ; and when a male and female of that species happen to be similarly gifted and to pair, the resulting offspring will accentuate the peculiarity of the parents, and thus will inaugurate a new departure, and ultimately a new species. The second school, on the other hand, seemingly less willing to admit the potency of accident in the operations of natural law, and larger-minded in the way it accredits the power of life as the very secret of evolution, claims that the variations are secured actually by the effort called forth in the need to surmount environmental difficulties. This theory is of older origin, and has many supporters among living naturalists of front rank. It was first formulated by Lamarck, while the former was the teaching of Darwin. The distinction is of vast importance. The accidental origin of variation is easier to grasp because of its seemingly mechanical operation, while the other demands of us a belief that the life of the

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humblest creatures is different only in degree from our own, and that Man's power of controlling his world in some degree is manifest in the very beginnings of life. Few of the older evolutionists dared dispute the continuity of natural law and the slow production of new species by the selection of minute variations. Wallace, however, though not departing from this standpoint, was compelled to admit that *Natura facit saltum*, in contradiction of the old adage, at any rate in the case of Man. Quite lately De Vries, the Dutch botanist, caught the evening primrose in the very act, so to speak, of a spontaneous leap—or *mutation* as he calls it to distinguish it from the indefinite and more general tendency to *variation*—and found that the seeds of the new kind repeated and perpetuated its new characters. His followers must now be ranked as a third school. Profound in philosophic suggestion, on the other hand, as are the theories of Weismann, who attributes all variations to sex-crossings, they do not materially alter the import of the older teachings. Whether such variations or mutations are selected for survival by the environment because advantageous in the contest, or whether, long latent in the germ-plasm, they are, as it were, at last discovered by the individual for adaptation to environmental needs, is the interesting question. The behaviour of Man, who most certainly does discover and use to his advantage hidden capacities that must be inherited, is at

least as important as the gymnastics of the evening primrose, though his seed does not always come true. Any way there is no evidence that Man has reached the limit of his possibilities. Socially he is still evolving ; and the process is one of revolt against restrictions and conventions of circumstance—a process inspired by a passion for a possible liberty.

That Man or his society is in process of attaining something which he or it has ever purposed, however dimly and failingly, will hardly be denied, save by such as are pessimistic. Perhaps all labour is salted by sorrow, yet none is effective unless inspired by hope ; and thought is not different. To discover in the past merits less manifest in this our day, is sufficient cause for some to bewail the olden times, to despair of the grain of mustard-seed which, by now, they think, should have become a flowering tree. By dwelling upon the virtues of the past, they often grow incapable of seeing beyond the vices of to-day. And they feel justified, because irresponsible optimists prefer to magnify horrors that are partly done with, so that, by contrast, they may enjoy more comfortably the many modifications of such horrors which they style progress. Neither one class nor the other is honest, because each lacks the faith to look wisely. If either knew more of evolution or history, they would gain insight : they would know that, as on the one side they must not condemn the past, seeing that it



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has evolved a bettering present, so on the other they must not despair of the present, seeing that they cannot know the future which it will bring forth. The study of nature and history gives hope to all humble-minded and eager workers that progress lies in an ultimate fulfilling of the Law and not in the brief life of our upstart systems ; it will persuade them that the Law, in spite of our stupidities in measuring progress by speed and cheap food, is intent upon its vindication.

(ii) MAN THE EXPONENT

Nature is a well of mystery ever deepening as we find water to draw. Nor is she niggard of reward ; for the more faithfully we dip into the deeps, the sweeter is the water. Of this mystery is the consciousness of liberty, destiny notwithstanding. If Man, a slave, is yet conscious of a freedom to act within limits; ordained by the Law ; knowing at the same moment that he is so far an exponent of the Law that, without him, it would lose its chief opportunity of manifestation ; he cannot get rid of a feeling, nigh akin to knowledge, that it is through his will and choice that the Law will be justified. We cannot but believe that the chess-player who carves as well as plays his pawns, and whose play is proclaimed perfect just because of their slavish obedience, has less right to a diploma of omni-

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potence than that other player who, understanding the game no less scientifically and fashioning his men no less skilfully, also has given them power to take part in the manœuvres and has delegated his skill to his creatures. Such a craftsman is not less great than the other, though on account of his men's freedom, within the laws of the game, to move as they please, the style of that craftsman's play is strangely perplexing, and his reputation for wisdom is gravely jeopardised. To some the only measure of a divine omnipotence must lie in the slavery of its creatures.

Man is made, or is at least become, a participator in the fulfilling of the Law. If it is because of this that things go so often astray, it is no less because of this that some find their responsibility. Indeed it is hope in this faith which lies at the very root of conscious, striving life: without it we must despair. That so few of the myriad multitudes realise the possibilities within them is no argument against the claim. Nor are the most important individuals those of rank or riches, nor even those who have conquered the domains of science or subjugated the lawlessness of the earth's kingdoms. The men and women upon whom the Law depends are they who, in obedience to a certain passion which they regard as their most cherished birthright, throw themselves into the *mêlée* of the battle, fighting for truth rather than the applause of the multitude. It is, when all is said, upon these that the greatness of



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our land depends, not upon its wealth or extent of domain. It is these who labour for the Law, careless of how or when, if at all, they receive their pay. It is these in whom the Law of the ages and men's hearts is justified.

They are the exponents of the Law, the lanterns that carry its light and shelter its flame. Among them we find a few heroes, some admirers ; a few leaders, some followers. Even among the multitude who drift, some commanding, some clothed in a comfortable scorn, are many who would enlist in the ranks of the brave had they courage. And not a few, who would at first have shunned the conqueror, can, when the time is passed away for joining his crusade, accord him the honour he has won. So fully do we appreciate our leaders when their work is accomplished, that there is small need to insist upon our obligation to them. But, whether or no our chiefs in this beginning of a new century stand where they should and rule as they might, the fact remains that there moves in the midst of our great, drifting multitude of aimless men and women an army that fights with a purpose—a purpose, however, which brings neither progress nor success as these are measured by the majority. And this army is more needed than officers to lead it. Though it is the generals whom posterity worships, it is the army, inspired by an innate passion, perhaps but newly awakened from slumber, that wins the day.

This army is composed of the many minorities

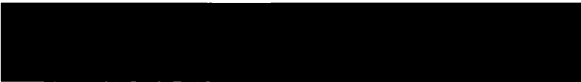
whom we may call Exponents of the Law. And in this place I desire two things beyond merely pleading for liberty : first to show that man's interests lie in learning from many whom he despises ; and secondly, to make some of the humbler exponents understand how it is that, for one or another reason, many of them actually stand in the way of the high purpose they seek. Yet, again be it said, it is in this minority, however little they know it, and despite their failings, that the Law finds its subjects. Spurred on in their desire for truer manifestation by a holy discontent with existing conditions, neither pessimism concerning the degeneracy of man, nor optimism that finds in an arm-chair the inspiration of its philosophy, damp their ardour. Their revolt from what is evil is inspired only by a belief in the possibilities of a good inherent in the nature of all things. Nor had they apology for refusing to conform but for this : that *all things ever have been, now are, and ever will be evolving from lower insufficiencies to higher possibilities.* Those in rebellion against things as they are, because not yet what they might be, must take their share in the process of the Law's evolution, because they know of the potential power that lies in man, and hate that he should sleep for the waters of time to pass over him. "Failure," say these apostles of unrest, "matters but little, only surrender. But we stand condemned if we so use life that the Law is shamed in our persons, our work, our institutions."



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These rebels, indeed, are the very salt of the earth. Presently I shall have need to define their places in society and the signs by which we know them : for it is not always by their show of fruit that we judge the good trees, and still less is it by their brave blossom : it is neither by their parentage nor their offspring, neither by their successes nor their failures. And yet it is of prime importance that, if we would have our country great, we understand, in the first place, not only who lead us but who our companions in the ranks should be. In fewer words, we must learn who are the salt of the earth. They often lead, though in rags ; sometimes too they serve, even though clad in silk ; and the mere by-product of present success or failure must not deceive us lest we miss our comrades. Yet they have and wear their uniform, although one so varied in cut and colour that their opponents laugh at them for a ragged, rebel crew. They are clothed in raiment whose colour none can tell save only those who hold it in their hearts.

But we may well ask how it comes about that, granted the power of the Law's ongoing in a great simplicity of purpose embracing all manifestations of life, the Law needs the co-operation of man. If the Law is as great as it seems, what excuse can there be for our discontent with the slowness, as we measure time, of its operations ? Why this inquietude which impels all saints and some sinners to be up and doing that which often



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brings personal loss ? If we believe in the might of the Law that has produced all things, why cannot we, ants of its many ant-heaps, or men and women of its fair gardens and palaces, rest in the peace that comes to those who work honourably ? Is there not a paradox in supposing that we can help or hinder the eternal forces that have been since creation began ? This is the abiding question indeed. No philosopher will answer it, though every system that ever was devised has tried a fall with it and has surrendered by begging the question. The strenuous believer, nevertheless, holds that in accepting his obligation to mend the world lies alone his means of doing so ; while his more orthodox brother fears to believe too much, and therefore does nothing. The liberal in politics holds that Man must reform his world at any cost ; the conservative that God having created all things, including even the devil and the British Constitution, it were as impossible to convert the one as impious to tinker the other. Yet it is not the Eternal Law with which the saints are discontent, or at the thought of whose slowness they are inquiet. On the contrary : it is even because of their belief in the Divine purpose that they are ashamed of the success, the prosperity, the luxury of the world ; it is because of the lies that men proclaim, shutting their eyes alike to starving virtue and surteited prostitution, to the improvidence of the poor and the aimlessness of the rich, to the courage of the destitute and the



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fear of the protected. It is against the fat failures that the rebels strive ; for they hold that no failure need be, if only men and women played their part, intolerant of stagnation and ignominy.

(iii) THE LAWS OF SOCIETY AND STATE

Practically, however, and whatever our theories may be, it is essential to morality that man should believe he has power to avert his destiny. To a definite extent, in other words, he must be a free agent, although it is impossible to outstep his evolution : otherwise the world had been peopled by automata, each instigated to action by the same motives of necessity as those of the insect communities. The ants have a perfect system of laws obeyed by all in unquestioning submission : they have no personal desire beyond the welfare of the state. From the point of view of its needs, the ants are infinitely more successful than men : from the point of view of the excellence of the individuals, the ant-cities are failures. For the personal sense is swamped in the sense of the state ; and evolution, whether of individuals or state, unless indeed variation depend solely upon accidental incentive or the environment alter, can advance no further. For the ants the equilibrium is established, the millennium is come ; the Law is finished and fulfilled.

With man and men's states, on the other hand,

the converse is true and obvious. In spite of failures, relapses and parasitism, growth has been constant and effective ; and this because of the right of the individuals as contrasted with the interest of the state. Man lives in virtue of his capacity for freedom : a gift, to enjoy which in its fulness, he must, it would appear, seize as his right rather than accept as a dole. To his evolution revolution is necessary. It is only because of the intensity of man's individualism, because of the deep possibilities of liberty regnant in his will, that democracy has wrested individual rights from thrones, oligarchies and churches. And I believe that the philosophic historian must find at operation, throughout the story of human institutions, certain laws, unwritten and unrecognised, upon which our progress has depended. As evolution in biology has been impelled by definite and simple processes in operation from the lowest to the highest manifestations of life, so will it be shown that a great simplicity of law is instigating all human progress, whether in the erection of its cathedrals and exchanges, its institutions and law-courts, or in the ever-growing sense of individual responsibility in the rights of liberty. The ant obeys because it is enslaved to the Law : man is learning to obey because the Law's inspiring intent is his progressive freedom.

Man is obviously accountable for his systems of law and the customs of his society. He has the faculty of choosing one course or the other, be

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he prince or pauper, pope or penitent ; and upon his choice depends the sort of change in his customs and laws that shall follow. They may lead into newer realms of environment, or drag backwards into forgotten paths of lower virtue. Nevertheless, however desirable it may be for man to realise his obligation to combat stagnation, he must understand that restrictions to evolutionary waywardness are altogether essential. For discipline is as necessary to strength of character as liberty is to the growth of a soul. Each serves the other despite their seeming warfare. Freedom must learn its strength in obedience ; obedience must learn that it has no life save in the service of liberty.

And society divides herself very curiously into two sections. The larger and more conventional condemns the smaller for its lack of so-called practical aims ; while the smaller and more wayward despises the lack of spirit that weds the majority to such poor ideals as respectability and monetary success. Which, then, shall the unenlightened follow ? Those who signalise their pursuit of the ideal by failure to achieve the common advantages of life : who in the rank and file of their ragged army, pass through life scoffed at by the sleek and well-disciplined ; who, in their frequent disregard of the arms and equipment essential to their warfare, are undeniably foolish ; who, often learned yet humble, sometimes ignorant yet boastful, are impelled to refuse the

easier way because impassioned for some better purpose in life than that endorsed by the majority?

Or shall they acquiesce in the ebbing and flowing drift of the more prosperous majority? Drift I say advisedly, seeing that those things which they pursue are ephemeral and valueless, seeing that they extol convention because it means ease, and use their energies only in emulating the manners of the social stratum lying next above their own, whether monetary or intellectual attainments be the accepted criterion.

The average thinker will, doubtless, affirm that, after all, these two orders do not comprise a distinction between the sheep and the goats, and that revolt leads by natural process to anarchy and disaster. Therefore, he says, if he must choose, he will unquestionably cast in his lot with the majority: for at least it excludes the criminal classes, and rejects even the wealthy gamblers and seducers of innocence when once these are exposed to popular scorn. Even if we grant that the morally disreputable must also be regarded as variants or rebels from the conventional type, certainly they are not desirable nor generally selected by the environment for survival. And we would ask this thinker to look below the average respectability, which, with so soft and thin a pile of gloss, hides what he would not know. The great majority agrees in the covering up of all that were better unacknowledged, all that would be troublesome if exposed; and when one among



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them seeks to tear away this covering, he is laughed at and vilified. Multitudes of undesirable variants are but freaks and sports, and are deliberately sanctioned by social apathy, though because of such toleration men are actually leading their type into retrogression. Such as tear away the rotten if glossy patchwork of respectability must become rebel and join the minority, though to do so means sometimes starvation and always a loss of touch with the virtues of convention that make life so pleasant and smooth. But sometimes also, together with the shackles that hindered their freedom, they discard many means of sympathetic intercourse ; of which more presently. As a matter of fact, no living things, despite the conforming majority, have ever advanced save by freeing themselves from the tyranny of environmental restrictions. It matters not whether these impediments have been overcome in the invention of webby feet by birds who swim or of stronger legs by such as cease to fly ; whether they are represented by the greed of the wealthy or the vengeance of the poor, by the fetters of the dogmatic or the effronteries of the scientific, by the cruelty of thrones or the immorality of democracies. Yet the majority takes small thought for the morrow, though even they are, in their day, busy in filling full the morrow with its unearned meed of misery. On the other hand, on looking ahead and realising how the needs of the morrow confer obligations upon

to-day, the little army, content in their poverty if it bring freedom to those who shall come, lay up treasures and cease to be anxious.

But what of the laws of the land in relation to the two great classes and the eternal Law? The laws of the land, however just they may be, are scarcely in sympathy with the transcendental outlook. So far as we can study the eternal Law, its purpose is to attain in evolution some great ideal whose concrete expression is hid from us, nay, is almost inconceivable; while Acts of Parliament are little better than temporary makeshifts.

It is because Man has liberty to defy the eternal Law that he must find some means of obviating the consequences of his outrages, though he never realises the futility of statecraft in furthering the great intent. He seeks to counteract the greed and heartlessness of his fellows by framing decrees approved by a cautious majority, though virtue is made well-nigh impossible by tyrannies which he cannot curb, and which actually seem sanctioned by some of his half-hearted antidotes. Yet with all his infamies and ignominies there has ever dwelt in his heart a sleeping passion for justice—a passion that struggles for incarnation in state-decrees. It is easier perhaps to restrict by mechanical measures the vicious tendencies of the people at large than to amend his own life. The process of law-making has been twofold, each reflecting some feeling of the evolutionary



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intent : the easier has consisted in the taking of what man deems his rights from those whom birth or money has placed in a seat of privilege, and the harder in the giving by those who have more than they need to those who have less. And each process is alike just, though they differ in initiative, that being impelled by duty to self, this by charity to others ; for both aim at the attainment of Freedom and Justice. Yet giving serves not Freedom, often not even him who receives ; while taking waits not upon Justice, even though it may benefit the robbed. The true progress of Freedom and Justice depends upon the rich man wresting himself from the golden shackles that bind him, and the poor man desiring, not the money and clothes of grandees, but the simple right to fulfil the Law of his being.

There is, I say, an obvious tendency among the people to judge of public affairs by ethical principle, and nowhere more than among working men, notwithstanding their narrow views. While the State must seek to restrict the opportunities of tyranny, the eternal Law is labouring for expansion in growth. The caterpillar finds it essential to devote its whole soul to the rules of dietetics ; but the Law no less is guiding it, intent upon the butterfly's freedom. Every step upwards in growth or evolution, whichever we prefer to call it, implies a relinquishment of that on which we stand ; and, seeing that the laws of the State hold us within adequate bounds, it follows that, as

capacity for Freedom enlarges, the state-laws must die and give place to new ones, lest, from having been originally steps onwards, they become restrictions to Progress. However just a law may be, it can only be definitely right until something better become possible. And if ever there arise the ideal city, for which I believe many are working, consciously or not, all state-laws will cease to exist because no longer necessary. Indications for guidance might still be required, and would change in adaptation to new developments, even in the most divine communities. But laws of restriction and punishment, of giving freedom where freedom was not earned, of taking from the rich for the easing of the poor, of compelling education and restricting licence, deal only with the vices and unkindness of society ; they take little count of the burning need of this very society for leading and enlightenment, and care even less for the clamourings of the eccentric who sees something of unwisdom in legal restrictions. Yet state-laws are at present, and will be for ages to come, absolutely necessary to counteract the very evils that have arisen from the exercise of unearned, or but part-earned, freedom. Not until this is ultimately sought by every one and justified by all, will the laws of the State need no further repealing or amending ; and then they will fall into abeyance like the prehistoric reptilian monsters which, though perhaps tyrant-policemen once in temporary service of some undiscovered



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Intent, became extinct because their environment had no longer means for their subsistence nor need of their services.

I would not, of course, have it understood that every Act of Parliament is conceived in the interests of ideal justice or in a spirit of even utilitarian charity. Even some recent events teach otherwise. I would but suggest, what appears to me evident enough, that the sum-total of our legislation indicates the desire of the State for freedom and justice. It is generally conceded that corporate bodies of men will frequently be guilty of mean and cowardly acts for which no one of the individuals composing such body would willingly be responsible ; and the fact is perhaps as true of some Parliaments as of certain mercantile boards of directors. But it is less fully realised that there is a corresponding tendency on the part of bodies of men to perform acts of virtue nobler than the individual components of that body could have the courage to achieve. The belief in such a truth, I imagine, accounts for the trust we place in a jury's verdict rather than in that of as many odd men in the street. And it may also lie behind our belief in democracy. An army may embrace an ideal as the main spring of its power, though not one soldier in the ranks would find such force strong enough to dominate his personal life ; and all because of an unrecognised spirit inspiring all to obey more or less sanely its divine impulses. At times the unconscious operation of

such ideal forces impels even the moneyed and landed classes to legislate contrarily to their pocket-interests, when perhaps few would have been found among them ready to give up what they considered their rights : witness the Reform Bill of 1832, the Repeal of the Corn Laws, railway legislation in general, the abolition of slavery, and the general mitigation of the old penal codes designed by the rich to protect themselves from the poor and starving.

But there is perhaps a profounder reason for belief in democracy, and one intimately associated with this trust of its integrity of purpose : democracy instinctively realises that the primary law of life, in its races, its intellect, its ethics, is growth. It understands that no state-laws can ever be final.

In the recognition of this fact lies the essential distinction again between conservative and liberal. The former seeks finality either because he finds the world passably good, and fears to better it lest it suffer in the process, or because he finds a tendency in things to right themselves by what he calls a normal process, and without subversive and revolutionary changes. The latter recognises that laws stand good only so long as we have not attained the possibility of enacting and profiting by better ones ; he holds that the march of the Law would be stayed if the will of man, through which alone its increasing work is manifested, refused to take eager share in its progress.

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The conservative is the comfortable, often very practical and honest, believer in his position in the most respectable of best-possible worlds ; while the liberal is the unquiet idealist, content to labour no less strenuously in a minority than he is to be faithful when his party can boast a majority. He it is who, when equally endowed with a passion for justice and the wisdom of the well-disciplined, teaches that the liberty of heaven can only thrive amidst the obedient on earth. He it is who knows that service is not servitude, that law is not tyranny. It is he who makes the great statesman and lifts the hearts of the people. And it is to him that our country ever looks to deliver her from her curse of dead respectability and poisonous wealth. Yet, though I believe that such points lie at the very root of our political classification, I would not have it inferred that the men of either party may not be equally endowed with that fine sense of honour, and that true desire for justice, which are the birthright of all who serve country before pocket. Nor do I hold that every wire-puller of a party-radical strives more for ideal betterment than the conservative, whom he dubs as time-server and opportunist. The dishonesties inseparable from all human institutions, be they exchanges, schools or churches, are found on both platforms. Yet, when all is told, and we separate the struggling wheat from the luxuriant tares that choke it, we find, I believe, that the eternal Law, without which neither wheat nor tares could

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thrive, is manifested more truly in the spirit of liberalism than in that of conservatism. Again, I exalt the restless inquietude and discontent of those who would have the world better, *i.e.*, tending more to conformity with the Law's prospective ideals ; and again I decry the contentment of those who, for peace' sake and quietude, would leave the Law to take care of herself, and only legislate in obedience to an immediate force of compulsion. And the men who love justice rather than riches, who would give of their substance rather than thrive at the cost of life's worth to their brethren, will ever be in the minority, except at certain times when the consciousness of the Law's demands rises to a great passionate wave and sweeps through the people. Such a wave is always uplifted by the wind of emotion, and is in a measure antithetic to the calm of reason. Such wave may be relatively good or evil : relatively good, when it arises in horror of injustice and cruelty—as in the popular anger against Disraeli's cynicism over the Bulgarian atrocities—relatively evil, when it takes the form of desire for glory in war and conquest. I say *relatively* because in the former case the merit in the people can be judged only by the advance that remains to them when the excitement is over ; because in the latter case, up to a certain point in national evolution, the spirit of physical contention for superiority is normal and necessary to growth. But in either case the

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emotion has some right on its side and stands in glowing contrast, on the one hand, to the conservative spirit that defends its slothfulness on the score of rationalism, and, on the other, to that small party which preaches peace at any price whatever, because of its cowardice and counting of the cost.

Except at such moments of national emotion, which, when the right men come to cry in the wilderness, will, please God, again and yet again raise us above the dead level of our contentment and uniformity, the liberal party must always be compound of minorities, simply because they find their strength only in their particular reasons for existence. The desire in every section of the party to better society may be equally strong ; and the conflict of such obligations in no sense need detract from the inherent virtue of each, provided they forget not their watchwords, Justice and Freedom. Nevertheless, upon great occasions all who desire true progress in morals, who understand that less poverty and fewer riches are not incompatible with prosperity, will, whatever be their shade of opinion or difference as to detail, unite in a singleness of horror at one or other of our national iniquities, and sweep the land of its incubus. Even now the Spirit is crying in the wilderness.

(iv) THE LESSER LIGHTS

In this essay I have already declared for two objects: the first being to show the majority of the contented, how much they err in belittling the unrest of those whom they dub cranks and faddists; and the second, to make these minorities understand how much greater power for good they would and should possess, if, in advocating their special schemes for righting great wrongs, they did but keep before their eyes the need of discipline and kind understanding. I have sought to justify those who revolt from accepted customs, who deliberately fret the contented, who molest the prosperous, till, in very weariness, these shall set their house in order. But I have not yet shown how and why these earnest, strenuous minorities miss riper fruition. If I plead that, in spite of their ill-success, reverence be yet paid to them, and, notwithstanding their frequent lack of intellectual precision, truth be learnt from their utterances, just because they are inspired by a divine passion; if I plead for this from the appointed legislators, the generous philanthropists, the smug professions, the hedged schools, the encrusting churches, I have also words even more earnest for these enthusiasts. For I would send many to school, to learn logic. I would bid others worship, to learn truthfulness; I would have some even hunger and beg, that, in better under-

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standing of its obligations, they might the better preach charity. And for one reason only would I thus offend : because, if these gifts were added to their big desire to overturn customs that shrink from amendment, their ideals would be better justified : the leaven of their work would sooner raise the bread of human endeavour.

Yet who are this army of revolutionaries, cranks, and uncomfortables, who will not quietly enjoy the life that is given ? Their enumeration will to some sound ridiculous, when their disparaged ideals are compared with the exalted functions I assign them. One phrase will include them all, though some of their sects I shall presently name for the sake of contrasting the urgent need of their work with their foolish and sometimes unrighteous methods. The inclusive name of this great section of society is Nonconformity—a word that in itself stinks in the nostrils of Respectability—that hound who goes about sniffing for what he imagines offensive because too sweet for his narrow understanding !

Yet why so offensive ? The hound, if he thinks for a moment—an absurd supposition, perhaps—must see how each advantage that has ever accrued to him, in the increasing comfort of kennel or the dutifulness of his masters, is no other than the result of nonconformity. The political freedom of the Anglo-Saxon race has been achieved only by a succession of acts of rebellion against the accepted order of things ; from the Magna



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Charta to Wickliffe ; from the memorable apology of Queen Elizabeth to the tyranny of Cromwell ; or from the sacrifice of their loyalty to higher obligations by those gentlemen who in grief razed the house of Stuart to the ground ; from the Reform Bill to the inspiration of some just men in this day who declare that, if the Empire is to stand, it must be guided by the light of the Gospels no less than must the lives of its component people. All great things have been won and given by those who would not conform.

And in science, literature, and the arts it is not different. Where would astronomy be now if the great ones had not risked excommunication ? Science herself would still have lurked in dark corners had not Luther been driven from a church that in his day countenanced any immorality if purchased through a plenary indulgence. Where would the Darwinian theory have been if its author had conformed with the views of the majority ? Where would modern surgery now have stood but for Lister's disregard of the sneers of his opponents ? Where would our Ruskin and Browning, our St. Francis and Tolstoy, our Wesley and Blake have been but for their non-conformity ? Where would Christianity herself have stood but for the tenderness of the Man of Nazareth to the outcasts of society, but for his scorn of respectability and observance ? A complete history of the world, in spite of crucifyings,

burnings, and ridicule, would be but the story of the constant justification of Dissent.

Your average thinker will not deny the right of the great leaders to awaken the people to the larger possibilities of life ; yet he will preach contentment to the hungry in the same breath as he will urge the wealthy to give freely of their superfluous incomes to the poor. Even if his Christianity is realer than this, he will fret or sneer when an enthusiastic member of this or that anti-something society talks of the drink-curse, the cruelties of trappers and physiologists, or asserts that trust in God should be supreme to faith in doctors or even quack remedies. Your average thinker will, I say, tolerate the great reformer, but will deny the right of the small one to think and act for himself ; or, if he must do so, the right to a patient hearing. And in religion also, notwithstanding Wickliffe, Milton, Bunyan, Wesley, the words Nonconformity and Dissent are offensive no less to the learned than to the fashionably foolish. And why ? Chiefly, no doubt, because of this love of ease, this lack of ethical enterprise, that characterise those who seek to do for the world what never was yet done, despite the pressure of their orthodox brakes, viz., to check its evolving wheels. They ridicule militant unorthodoxy because ridicule is easy, and then find excuse for their derision in the discovery that the prophets hail from Galilee, or are not 'Varsity men. Or the converse may be truer ;

because they do not like the provincial accents of those whose minds have not been duly starched at Oxford, or whose wings are not folded by a bishop's hands, they cannot believe these prophets have a mission to the cultured.

But there are other not altogether insignificant explanations of the contempt with which the respectable regard the lesser lights. For the reformers, the protesters, the cranks, are often curiously unwise in their method of attack, and are in part responsible for prejudicing the people against the claims of justice, virtue, and righter ongoing. Some prate of dissent as though it were in itself a virtue. Some bedaub the infamies they unmask with flaming colours that serve not the truth. And some make Liberty herself ashamed of her disciples.

Is it necessary to specify more definitely? Your ranting socialist reviles the average man in words that, though largely justified, drive him from the way of truth and confirm his conservatism. Your vegetarian shadows the truth of his principles by inventing horrors that should assail the meat-eater, though his case is strong enough without the support of his ignorance. Your Christian Scientist, though inspired by an absolutely sane faith that trust in the divine life which all men share, will effect unsuspected wonders of healing without the help of drugs, brings himself and his system into ridicule when he refuses a dose of castor oil to a child with a

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pottleful of rotten strawberries in his little belly. Still more does he dismay the simpler Christian when he denies the reality of Christ's suffering and appends to that holy name the equivocal epithet of *Scientist*. And yet we must accord even this latest product of righteous insubordination its due, and learn if possible the truth that underlies its absurdities. The churches have let slip from their hearts and minds the great possibilities of bodily healing that lie in pure faith ; and they have no greater condemnation to face than this, that, despite its tricky gnosticism and irreverent docetism, this newest heresy can do more for men's suffering bodies than rival priesthoods claiming a monopoly in Apostolic privileges.

Notwithstanding the sincerity of all reformers, the cultured man is, I say, curiously repelled by them. He says, after an impartial examination of their claims, that they are not honest in the inferences they draw from their indisputable facts, that they look only at one side of a question, that they do not understand the conflict of obligations. He accuses them of intolerance, which is perhaps the greatest sin of all in this age, when it is almost a solecism to say a word in good society that shall make a man think.

But this cultured man will remember certain facts, even if reluctant to allow them. The Galilean has an uphill fight : he seeks to open deaf ears, and he must use a big drum or men

will not stop to listen ; he would make men see, and so uses colours that perhaps offend the æsthetic, but yet may be flames to the colour-blind ; he would arouse some whose understanding is lost along with their souls, and he must describe in the most terrible words the horrors of hell. For, after all, it is not usually to the cultured that he speaks : they have their own salvation. It is to the average man who, while he is offended, may yet listen ; while he wavers, may yet turn his eyes to the right road and open his ears to the truth.

While I am venturing to show how certain restless spirits trouble the social waters that the sick may find in their deeps virtues for healing, I have yet a word to say to the cranks and eccentrics and faddists. To them I am grateful for much teaching ; and I pray them take no offence if so uninspired a colleague mount the pulpit, nor accuse me of making terms with the enemy if I claim that he too needs some defending. I would urge the idealists not to let their discontent with custom breed contentment with self. I would pray them allow their high privileges to enlarge, rather than narrow their minds ; for if they, in dwelling upon one aspect of a truth, disregard the facts of another, they are rejecting the first means of teaching. And yet it must be freely admitted that the faults of the eccentric and enthusiastic are no less prevalent among their opponents. The exaggeration of physiologists concerning the benefit that has accrued to



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humanity from their vivisections are as flagrant as the untruthfulness of their detractors. The advantages claimed for alcohol by its advocates are quite as absurd, and the selfish pratings of the brewer on the rights of the working-man to drink as he pleases, are quite as immoral as the teetotaler's condemnation of the temperate drinker. The meat-eaters hold even more unscientific views as to the necessity of flesh than do the vegetarians as to the dangers that attend its consumption ; and the luxury of our modern table is more harmful than the vegetarian's absurd dictum that flesh-eating conduces to immorality. The faults of the opposition are but the faults of the party in power : it is the virtues that shine in contrasting degree.

Yet if this be so, why should the opposition be singled out for admonishment ? Simply because the non-conforming, strong in the majesty of the Law's intent, own deeper obligation to drive out the seven lesser devils who wait upon the big one they have slain ; because these seven frighten some who would learn, and make merriment for others who will not ; and lastly, because the lack of precision in facts, the prejudice against evidence that should qualify condemnation, the stupidity and conceit which belief in an inherent merit in dissent engenders, account alike for the prophets' temerity and failures.

Must we, then, on the other hand, infer that it is only in radicals and eccentrics that virtue is

found? Are those the only ones in the community who fight a strenuous battle against the degenerating tendencies inherent in the race?

Such conclusions are altogether foreign to my argument. Every man who follows that which is of high purpose rather than of passing, personal moment, is serving the eternal, although he is so willing to despise those who preach in the streets, or give their lives for the realisation of ideals. Many a man, believing fully in his obligations to obey the right, rather than the easy instincts of his nature, is yet embarrassed if any discuss at his table things of the deepest import. Such a one will perhaps act righteously so long as he is not accused of eccentricity. Many are infinitely better than the corporate voice of their society, and do not realise that they are nevertheless responsible for it. Few of this majority possess the courage of their saner conviction. And herein again we find distinction between such and the despised eccentrics and fanatics: these have the true courage to speak what they believe, and to act as they preach. The martyrs and saints were all, from the point of view of the majority, fanatics if not madmen. And it is to those who waver, who would, yet think they cannot, that the fanatic appeals; it is in these that the spirit of life would grow stronger if perhaps some of the idealists were truer to their faith.

We dare not forget what we owe to those who



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are unquiet in conformity. To send all the fanatics to school might deprive the world of its heroes, if not its leaders, although to do so would rob the scoffers of some vulgar merriment. We dare not, if we could, silence the idealists, notwithstanding the discomfort they bring; nor would we abolish even the opposition-societies for all their failure to understand that the truth is ill-served by intemperance. Better that all England were prohibitionist than that half her population should be breeding children who hold as their birthright an uncontrollable craving for beer and blasphemy, champagne and impiety. Better all were anti-vivisectionists and sentimentalists than that we grow callous to the sufferings of the humble and meek, be they hospital patients or lowly animals.

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III

VIVISECTION AND PROGRESS

THE average man soon forgot the important trial of *Bayliss v. Coleridge*, though for some days afterwards he gave free expression to his views upon the question of vivisection. The case was one where a distinguished physiologist brought an action for libel against the honorary secretary of the Anti-Vivisection Society. The technical justice of the verdict, notwithstanding the vindictive damages, was unequivocal. Yet it is probable that, although some good may have accrued from the plain presentation of evidence, some harm has also resulted from the average man's assumed right, because of the verdict, to forget the essential points. If this trial made a few look again into the question of experiments on live animals, the verdict seemed to justify many in turning away from the loathsome subject and exulting in the judicial rout of the merciful. Nor can the majority perhaps be reasonably blamed. We are, in this age, so beset with the horrors of the world that, with plenty of heartaches to face in

our lives, we too eagerly accept any evidence that the evils not immediately touching us are more imaginary than real. Besides, *un pazzo fa un cento*—one madman makes a hundred—says the Italian proverb ; and if the Lord Chief Justice with a jury of educated men declared Christ Himself to be a madman, most of us would avoid Him lest He turn our heads. Too readily did we take it for granted that the defendant in the libel case had no right on his side, because, in his testimony against what looks to some like a blot upon our civilisation, he was proved guilty of inaccuracies that could be met only by punitive damages.

But though perhaps it was the indolent in thought and feeling who found most satisfaction in this trial, it is not desirable that either party—those who acclaim the rights of science to use any method it pleases, and those who would prohibit vivisection—be content. This trial put prominently before us some points that deeply concern the whole world ; and in the hope that they will never be forgotten, I desire to examine them more fully. For the question of vivisection concerns our welfare and progress, our individual rights and national honour, more nearly than the man of moderate views supposes. The subject is deliberately shelved by most people as being too complicated for the lay mind to tackle. And this attitude is apparently excusable when one remembers the sort of evidence flung before them

by the many societies that oppose vivisection. These accept from the ignorant any tales of tortures inflicted upon animals that are sentiently dead. They hold up to opprobrium names of the greatest and best, and class them with names that are execrable. They distort statistics and deny facts that mean incalculable good to humanity. In their really noble passion for the rights of the weak, in their hatred of the misused power of the strong, they use weapons that are not lawful. And they damage the cause of justice and mercy.

Nor is it much wonder. I believe that any mentally well-balanced man, looking into a physiological laboratory, would turn sick at the sights revealed, even though he knew the animal under experiment was deeply chloroformed or brainless. And when I specify a mentally well-balanced person, I do not mean one who regards his natural feelings as untrustworthy any more than I mean one who regards the facts of science as fraudulent because he does not like them. I believe still more strongly that the moderate anti-vivisectionist has much excuse for becoming immoderate ; I even excuse his gross exaggerations when he is faced by the untruthfulness, the stupidity, and the recklessness of suffering evinced by many who rank high in physiological science ; and I even sympathise with his use of brickbats when he realises the hopelessness of his task, opposed as he is by the grim weight of authority supported by popular apathy.

Thus both sides become untruthful and both angry. The moderate man sees something of this, stands aside and backs the winner. His sympathies are largely with the poor animals as long as he and his children are healthy and enjoy the companionship of their four-footed friends ; but his feelings wax greedy for the gifts of science when his little ones are down with diphtheria, or he himself is hopelessly fighting a cancer.

It is because of the difficulties with which the public are beset that I am constrained to put the truth before them, impartially, as far as I am able, and imbued, I hope, with a full sense of my responsibility in so doing. The task is not easy, because I have arrayed in opposition to me three classes, all prepared to fight in defence of their positions.

The first class holds with the physiologists. They say that knowledge is the outcome of experiment ; that it is only by the knowledge of nature that we can find the laws of disease ; therefore, that if we would know the laws of disease, we must experiment on the living animal, and inflict it with disease.

The second class comprises those who maintain that no perpetration of evil can ever bring good ; that cruelty is evil ; therefore that vivisection can bring no real, lasting good. Indeed, they go further, and assert that it has done no good.

The third class includes most of the public. They are indifferent. They hold that such

questions are for the expert alone ; that the public can never be expert ; therefore, that they must leave the scientific to their own ways and give them all they demand.

It is my intention to review especially, though in brief, the claims of the first two classes, and, having done so, to make appeals to all three. But I must, in the first place, deny the claim of the indifferent, that the public, because they can never be experts, are incompetent to judge upon this matter. On the contrary, I believe that not only is the layman competent to judge, but is bound to do so. In other words, the question is one that the State must decide. The whole principle of democracy is involved in the belief that the people are most competent to decide upon any question that concerns them. Yet, though in so believing they assert their right to repudiate the assumed infallibility of authority, they dare not pretend to legislate without honest examination of the evidences brought before them by the agents of authority. It is true that the people can scarcely understand the facts until explained by those who have studied them ; but the intelligent lay mind can always grasp the principles or laws deducted from those facts, and judge of their value. Thus the advantages and dangers of vivisection can be arrayed in intelligible order only by one who understands the subject. But the public, having heard the evidence, must decide whether or no the State shall more willingly



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sanction cruelty in the secret laboratory than in the highway. It is, indeed, because of these secret places, to which the public can gain no access, that many exaggerate the horrors of physiology, and tear their right passion to tatters, instead of thrice arming it with justice and truthfulness.

The best method of enabling the reader to judge between the physiologist and his opponent will be to put before him a few of the more important facts.

I. THE CASE FOR THE PHYSIOLOGIST

It is beyond all dispute that Harvey, who is generally accredited with the discovery of the circulation of the blood, substantiated the inferences of older observers by vivisections. Nor is it to be disputed that every discovery which has advanced medical science can be traced back to its elemental parentage in this first great step out of the dungeons of necromancy into the light of science. It is almost impossible for us now to realise what difficulties of prejudice and ignorance lay in Harvey's way. The mechanism of the valves in the heart and the veins, which valves could allow the blood to flow only in one direction, in itself seems sufficient proof of the course of the blood. Yet we must not only accredit Harvey with this discovery, but also accept his statement that it came to him through frequent and patient

experiments on the living animal.* It is beside the question to argue that this circulation was not actually demonstrated until forty or fifty years later when Malpighi, placing the lung of a living frog under the new two-lensed microscope, demonstrated the passage of the blood from the arteries into the many-branched capillary vessels, and these again into the smallest veins. The anti-vivisectionist argues that this fact is as readily seen in the web of the frog's foot without any vivisection whatever, and that it had been correctly assumed by Coesalpinus a half century before Harvey. These must be granted. Nevertheless, we cannot deny that Harvey's experiment first established the fundamental principle of physiology and medicine.

Again, to use another instance, it is simple fact that John Hunter, greatest of all history's surgeons, through vivisection put on scientific basis the cure of aneurism by tying the artery. We must even admit that mere scientific curiosity, and not even the desire for establishing an hypothesis or finding a cure for something, suggested an experiment that ultimately proved a boon to humanity. The story runs thus. Judging from the heat and rapid growth of the young buck's antlers that the blood-supply must be exceptionally rich, he was curious to ascertain whether one antler's growth could be checked by tying the artery from which it drew its blood-supply. The buck was thrown, and the artery

* "Experiments on Animals," by Stephen Paget, 1903, p. 7.

tied by an operation involving but little pain, the immediate result being the cooling of the antler and arrest of its pulsation. A week later he examined the same animal, and found to his amazement that heat and pulsation were fully restored. He killed the creature, thinking that the tying might not have been secure; and, upon ascertaining that no fault could be found with the operation, he made this amazing discovery: that minute arteries given off from the artery on the near side of the ligature, which inter-communicate with similar small vessels ramifying from the same artery beyond the ligature, had become so much enlarged that the blood-supply to the antler was fully maintained. From this he inferred that when the main artery of the leg becomes distended into an aneurism, as sometimes happens behind the knee, he might safely tie the artery, where it is accessible in the thigh, and cure the dangerous malady, without depriving the leg of its nutriment. It has, of course, been disputed whether Hunter should be accredited with the honour of this discovery. But the evidence is overwhelming that he established its reason, if not actually its practice, and thus brought it into the precincts of scientific surgery.

One might give many instances of discoveries that have resulted from vivisection, though to most of them a more or less plausible contradiction is brought. The innumerable experiments made upon the brain and spinal cord, to ascertain the

locality and co-ordination of functions, give unequivocal evidence in favour of such experiments. Nevertheless, no student of the subject can deny that Sir Charles Bell and Charcot, by the study of disease, have taught us far more of nerve functions than has the experimenting physiologist, however skilfully he may have verified their discoveries.

But I think we need not enter upon the discussion of such points in our defence of the physiologist. For the efficacy of the serum-treatment of disease lies before us in overwhelming evidence. Diphtheria, one may say without exaggeration, is now robbed of its terrors ; for we have found a substance that is practically harmless to the patient, yet inimical to the life of the diphtheria bacillus. Statistics, though in this case convincing, are so proverbially unsatisfactory that I hesitate to quote them. Far more valuable as evidence are the individual experiences of those who have seen much of diphtheria under the old system, and can compare it with the serum-treatment of to-day. Formerly, diphtheria was perhaps the most terrible acute disease with which we had to contend. Small children do not suffer from some kinds of pain as much as adults ; but diphtheria made only too obvious the depths of suffering that the little ones are capable of. Nor was the pain the worst of the symptoms ; for the slowly-increasing fight for breath and the child's piteous appeals for help



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built up an anguish that only parents can understand. And the doctor himself was almost useless ; for tracheotomy, the last resort, seldom did more than prolong the life a few hours, and make dying, perhaps, a little less terrible. Now all this is changed, at any rate, when the patient is treated early. One of the most certain things I know in medicine is the beginning of relief and the peeling off of the awful membrane, twelve hours after the injection of the serum.

Not long after the introduction of the antitoxin into general use, I had occasion to visit the Evelina Hospital for Children. After leaving the diphtheria ward, where the children were all sitting up in their cots and playing with their toys, I asked the Sister her views of the new treatment. "Why," she said, "the diphtheria ward used to be the saddest we have, and now I think it is the happiest." A statement like this should go further than any number of statistics. Notwithstanding the animadversions cast upon the serum by the extreme anti-vivisectionists, I think any sane doctor would be criminal in refusing to use it. Nevertheless, some parents dare to assert that they would rather see their children die of diphtheria than use a remedy which had been obtained by the infliction of suffering upon a horse. Dr. Berdoe, who recently published a book * in which many of the charges against vivisection are substantiated, loses his sense of

* "A Catechism of Vivisection," p. 118 *et seq.*

logic in his discussion of this serum-treatment. He honestly admits that the suffering of the horses inoculated with diphtheria to furnish the antitoxin is inappreciable. But, after arguing as to an assumed uselessness and danger of the anti-diphtheria serum, he says that its efficacy is due to the carbolic acid with which it is prepared and to improved local treatment. Now, the amount of carbolic acid in the serum is so minute (5 per cent.) that it could have no action as an antiseptic or antitoxin. Moreover, carbolic acid had already been used in far larger doses without result, while local treatment has now become almost unnecessary. So that the most tender-hearted mother need not refuse to cure her child of diphtheria because one of the lower animals suffers. The suffering to the horse involves the prick of a hypodermic needle—ininitely less painful than the prick of a spur or lash with a whip—and subsequent bleeding, an operation that our great-grandfathers voluntarily suffered twice a year without flinching.

Still stating the case for vivisection, I must defend the physiologist against some of his unscientific traducers. Thus we are bound to admit that in any operation the pain inflicted upon an animal, whether human or other, after the first incision in the skin, is so trivial that those parts of the operations which to the uninitiated would seem the most terrible are often the least significant. A layman witnessing any ordinary vivi-



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section would, as I have said, be appalled ; but many of the animals on which experiments are practised without chloroform, morphia, or chloral, have had the cerebral hemispheres, those parts of the brain concerned in consciousness and volition, previously removed while deeply anæsthetised. Thus, although such an animal may exhibit reflex movements, it is practically dead. Then again, the capacity for suffering varies so remarkably in different animals, that it is quite absurd to compare the sufferings of a guinea-pig with those of a man, were he placed in similar circumstances. This argument is perfectly justifiable, though, if we look to its logical conclusion, as I shall presently attempt to do, we may use it with shocking consequence.

II. THE CASE FOR THE ANTI-VIVISECTIONIST

The case for the anti-vivisectionist is necessarily harder to justify in terms that shall be logically satisfactory, just because he depends upon sentiment rather than upon reason. The inevitable tendency of all education is to favour the development of the intellectual rather than the emotional functions, because the emotions, when undisciplined by reason, are so often untrustworthy. Nevertheless, it does not occur to many who most loudly acclaim the supremacy of reason, that even reason becomes distorted unless inspired by those emotions which are more surely part of

our nature than the artifices of our scholastic education. Nor must the scientific think the emotions are to be discredited because they find their chief support in the apostles of poetry and art. These are needed in this day, more than ever perhaps in the world's history, because our material progress, boastful and shameless, seems to endorse the fashionable contempt of the simple virtues. I would even more strongly justify the fine spirit of the anti-vivisectionists, though many of their methods seem to discredit their fervour. But, notwithstanding the lack of logic in feeling, there comes a point in which most physiologists overcome their disparagement of sentiment. They argue that the capacity for suffering stands in direct relation to the intellectual development of the individual, and that, just as our more obtuse patients do not suffer as acutely as the better educated, so the dog, having lower intelligence, must be less sensitive to pain than a human being. And from this the physiologist argues that it is absurd for the anti-vivisectionists to gauge the feelings of a dog by their own. But we have only to carry such a line of argument to its logical conclusions to be brought face to face with the extraordinary phenomenon of even a physiologist being guided by his feelings. For most will maintain that a highly educated dog, one who so loves his master that he will risk his own life to save him, or die of grief on his grave, must be more highly developed both in mind and

in feeling than the human infant. The latter, as every doctor knows, has but small capacity for pain, and will wail as piteously for its mother as it does when suffering from the wind, or during a surgical operation. Yet even the physiologist will allow his sentiment to interfere between science and the vivisection of a baby; even though such baby be a pauper orphan, and riddled, perhaps, with disease. This granted, I ask of the physiologist to show me by what law he justifies his own sentiment, while he despises the sentiment of that man who would stand between the needs of science and the suffering of a dog.

Although I believe that every English physiologist would stop short of human experiment, yet it is beyond all dispute that in some Continental hospitals such practices are tacitly sanctioned. I can give chapter and verse for such accusation. And I know from my own personal observation that the treatment of hospital patients in Vienna, where the physiological laboratories are possibly the most cruel on earth, horrifies the right-minded English student. I think such facts lend very great weight to one most important claim of the anti-vivisectionists, namely, that familiarity with vivisection must have a demoralising effect upon the students, as well as upon the vivisectors themselves. And, if this is conceded, the assertion of the anti-vivisectionists, that animals while undergoing operation are often not properly

anæsthetised, may be justifiable. The unfortunate animals are so rigidly bound, gagged, and maimed that it perhaps matters little to the success of the experiment whether or no they are unconscious. It is, I most reluctantly admit, almost impossible to get evidence upon such points ; and for this reason, that the things which we fear are practised in secret places. Nevertheless, it is just because of this secrecy that the public have a right to make trouble. But for John Howard's crusade against the horrors of the prisons, the public had never known the truth, their infamies had never been remedied ; and the public have now as much right to question the physiologist's repudiations as John Howard had then to doubt the denials of the jailers. The evidence is sufficient to justify, in my own mind, a large measure of sympathy with the anti-vivisectionists, though I am not one of them. And I agree with them in their demand for legislation on at least four points. The first is, that vivisection ought to be prohibited for purposes of teaching, because often misleading and always demoralising. The second is that the inspection of the physiological laboratories should be carried out more systematically and always unexpectedly, and that the inspectors should be largely increased in number. Thirdly, I would prohibit all dissections, with or without anæsthetics, upon live horses and dogs. Fourthly, I would make the administration of curara, for purposes of experi-

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ment, a criminal act. The existing law forbids its use in place of an anæsthetic ; but the fact that an animal, when under its influence, though capable of feeling, is incapable of expressing its suffering in any way, makes it impossible to determine whether or no the subject is really insensitive even when chloroform is administered.

These would comprise the limits of what is possible or wise in amending the existing law. No Act of Parliament can eradicate the spirit that makes cruelty possible. Legislation necessarily has in view the protection of the weak from the strong, the peaceable from the vicious, rather than the reform of the outcasts. To prohibit vivisection altogether would be to invite its performance in such secrecy as no system of espionage could penetrate. Legislation can seldom do more than compromise, because it cannot essay the impossible. It cannot make all men equal. It cannot give liberty. It cannot even hasten fraternity. Nor, if the State puts every possible hindrance in the way of drunkenness, prostitution, and cruelty, must it be charged with sanctioning them

III. THE APPEAL

And now I come to my appeal, which must deal with the three classes : the physiologists themselves, the anti-vivisectionists, and the indifferent public.

For the first of these I have but few words, for their claim that out of the multitude of their unprofitable experiments more discoveries may yet come must be granted. John Hunter, as we have seen, learned a most valuable fact through an experiment that was not prompted by the wish to benefit humanity. Yet, notwithstanding the success of his vivisections, he laid it down as a rule that no experiment that had once established a fact should be repeated. Perhaps he might think differently in these days of anæsthetics, though I doubt if he would brook the time wasted on an elaborate dissection to instruct students in a physiological law they had never disputed. I suspect, moreover, that Hunter would have felt there was some danger of lowering the student's conception of the sanctity of life and wonder of physiological law by the display of a sentient animal's entrails, especially if he had to admit that the profit was problematical.

But my appeal has a more practical side, and one that seems to me of utmost importance in the interests of the public, for whose benefit, the physiologists so constantly tell us, their experiments are chiefly made.

The physiologist is never a practitioner of medicine, and has no close knowledge of the doctor's honoured place in the community. He perhaps hardly realises how almost every family in the kingdom is beset with tragedies, real or imaginary, great or small, yet tragedies, and in



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how many of them the doctor is the first to be sought for succour ; and this not only in matters of medicine. The physiologist does not know how deep is the popular horror of his practices, and how they are tacitly accepted only because of the people's trust in the profession. They know how ignorant they are of their maladies. They must either accept our treatment or find comfort in their ignorance ; and if they too readily accept the statement of the physiologist that experiments must be made on the living animal, though they hate them, they cannot be much blamed. Nevertheless, in the minds of many, there is rising a grim distrust of the doctors ; while among the poor, chiefly, I do not doubt, because of the horrors related by the anti-vivisectionists, a real fear of the hospitals threatens to over-ride the sufferers' needs. And this distrust and fear are, I think, a real danger : and in no way do they lessen the distrust of fine health and the growing fear of disease that, spoiling men's courage and making them savage in the hunt for remedies, quack or true, are characteristic of our day.

So that I would ask the physiologist not to disparage the feelings of the people, partly for the sake of the public sanity, partly for the sake of the authority that doctors wield. Faith in the doctor will not long survive his loss of the deeper kindness. I would beg the physiologist not to forget the plastic minds of the boys and girls

whom he teaches, nor to miss any opportunity of making them realise in practice, no less than in theory, the purpose of their future life—namely, the relief of suffering. I believe that familiarity with the signs of anguish, which not only cannot be eased but is actually inflicted for purposes of teaching, must produce some lowering of the student's sense of his obligations.

It is, moreover, a question how far the teaching of physiology is helped by living dissections.* The student can never grasp vital processes by vivisections as he would physical laws by chemical and mechanical experiments; not even with all the scientific makeshifts for compelling an outraged life to remain in a dismembered body. But he can dissect the dead body; he can understand chemistry, as matter of experiment and proof; he can master the laws of physics. And he will grasp the laws of life, I think, better by studying the nature of man

* The following experiment is often quoted to prove that the glandular secretion is influenced by the emotions. A fistula can be made with the gall-bladder, so that all the bile is collected from the animal's side and measured. A favourite dog is thus treated, and the quantity of bile secreted in a certain interval is measured. The creature is then harshly scolded, and left curled up in unearned disgrace for a like period, during which it is found that the flow of bile is greatly diminished. This, we are asked to believe, is a necessary experiment, as otherwise the physiological fact would rest only upon the evidence of worried mothers in the matter of their milk or of nervous youths at a *vivâ* in the matter of their salivary glands!



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than by dissecting the living dog. All experiments on the living animal tend to mechanicalise the conception of vital energy, while truer teaching will ever idealise life as the master of its own chemical changes and mechanical powers. In one word, I would ask the physiologist whether, considering the future work of his pupils, it would not be better to discontinue teaching by demonstrations on living animals. And, when he remembers how many of his experiments fail altogether to prove the very points for which the dog's life is sacrificed, he cannot deny our right to question the need of them.

Next comes my appeal to the anti-vivisectionists. I have already asserted my belief in the right of the public to decide upon all points of national importance, and that I hold vivisection to be one of them. The cause of the anti-vivisectionist is so good that I believe it will prevail when at last we understand that true progress of the human race depends more upon its humanity than upon speed, money, and commercial supremacy. But, though this understanding be as yet far from attainment, I am sure that the tactics of the anti-vivisection societies are doing harm to their cause. They fight with any weapons they can lay hands on : soft-nosed bullets and Greek fire, as well as weapons of fine steel. Whereas if they would use the peaceful measures of truth, and shun, because hurtful to their cause, all things that are not true, they would enlist on their

side numbers of men and women, doctors and scientists, parsons and teachers, who now stand on one side, and, because both sides are wrong, let them fight it out between them. I know well the helplessness of the anti-vivisectionist, the impossibility of his getting information first-hand ; I know well the irritation of the gibes with which he is baffled by his opponents. But, on the other hand, I know how many a doctor, at heart a moderate anti-vivisectionist, is tempted to take up arms against those who malign the name of the giant-hearted Lister—a name that will be acclaimed a thousand years hence as that of one who, chiefly because of his love of man and his pity for the suffering, learned the power of science to conquer disease. Lister was, and will always be, my master ; and hundreds of his disciples itch to smite off the ears of those who betray him. I am told by a well-known practitioner, an indefatigable worker with test-tube and microscope, that 90 per cent. of the profession would express views similar to mine on the vivisection question ; but that they are driven to oppose those who deny the efficacy of some remedies that are true God-sends. So I ask these enthusiasts for the honour of science, these lovers of dogs as well as of men, these idealists who hold that students of medicine should be encouraged to reverence life and to sympathise with the suffering of all flesh that suffers ; I ask these to trust their faith for its truth and to be accurate in the evidence they

adduce against their opponents. If they care to ask me in what respect they are inaccurate, and therefore untruthful, I will tell them. And I am prepared to speak no less plainly to their opponents. But my object is not controversy.

And now I come to the third class: the indifferent. It numbers many who consider themselves tender-hearted, yet whose tender-heartedness is chiefly evident in a dislike to being hurt. It numbers the lazy, the comfortable, and those whose courage is sapped by the fear of disease. It numbers, too, without doubt, all those who uphold the doctrine of the survival of the fittest, because they themselves have survived.

The indifferent shelve the question of experiments on animals, either because they think that the lower animals are given into our hands for our uses, or because they look upon man's might as his right. The former, for the most part, will call themselves Christians, and the latter will justify their claim because they think it is scientific. And, because I would have all understand that the vivisection question is a point of national honour, and therefore concerns patriotism and progress, I must tell some home truths.

The scientific indifferent I take first. The so-called law of survival of the fittest does not summarise the law of evolution unless we accept it in the sense that he lives most fitly who loves most truly, who knows that the greatest privilege his strength has won for him is its power of helping

the weak. To take the law of survival of the fittest in a lower sense is to prophesy an ultimate condition of society that will inevitably compass the annihilation of those very attributes which, by common consent of the human race, have been accounted its essentials ; or we had never signified such big ideas in that honoured word *humanity*. Our humanity comprises not only that tenderness of heart which is charity, but the relinquishment of the winnings of strength for the strengthening of weakness ; and if the survival of the fittest in grosser sense is to be the final outcome of our evolution, our humanity must slink away and hide ashamed in the secret hearts of the unfit. Then all things that advance the triumph of man over man, and man over beast, may be trumpeted abroad as the orthodoxies of science. Then the ways of the crafty, the logic of the pickpockets, the creeds of the mighty that sit upon seats, may be acclaimed as justification of the great law that the vulgarly fit shall survive, that the meek shall not inherit the earth. It is only in such belief, I say, that our assumed right to use beasts lower than ourselves for draught, for pleasure, for food can be interpreted into a right to experiment upon their living bodies in wanton contempt of Nature's secret depths. But this dogma of survival is not scientific, because it is not based upon an understanding of all the facts. For he who limits his study of evolution to the dead bones of the museum, or to the living wonders of the embryo, will never

know the meaning of evolution. So long as he ignores the finer attributes of the highest outcome of evolution, Man, he cannot be either scientist or prophet. The greater scientist, I affirm, may yet come to believe that the progress of the race can in no way be advanced by the perpetration of that most unscientific, that most retrogressive crime against the law of higher evolution, cruelty. I pray him who thinks his apathy on the subject of vivisection is justified by science, to be true to his science and less sure of the infallibility of its set precepts. And I pray him ask whether the concentration of our hope upon the physiological laboratories may not endanger that largeness of mind which has ever been the characteristic of such men as Newton, Hunter, Darwin, Wallace, and Lister.

Now I come to my last words. And I would they could pierce the petrifying minds of those who, while considering themselves religious, are so comfortably indifferent to the suffering of the world in which they live. If they call themselves Christians, is it too much to pray them accept their faith as literal truth ; so literal, indeed, that no point in its teaching can be denied without disaster to the whole ? I would beg them, for the sake of consistency, remember the two cheap sparrows, and that one of them could not fall on the ground without the fact being known to the eternal Justice. It cannot be other than an article of their faith that the love of God is

essential in the life of the lower animals ; science will never show that it is not. They cannot forget that kindness done to the least is divine service rendered ; nor can they shut out the correlative fact that he who offends one of the least is following Iscariot with torch and stave to the great betrayal. These are but points in the Christian's creed that are often forgotten.

The hope of the future, the possibility of progress, are bound up in the understanding that increase of wisdom will arise and build strength upon no other foundation than our inheritance of humanity. The cruelties of fashion in feathers and furs, the barbarities of sport in grouse-drives and pigeon-shooting, the inhumanities of trade in slaughter-house and poultry-cramming, cannot be separated in their influence upon the race from the barbarities that sometimes, if they do not commonly, figure in the physiological laboratories. Excuse is found for all. The need of warmth and artistic adornment seem to exonerate the woman of fashion ; the need of food and healthy exercise appear to justify the healthier male ; the hunger of the multitude may make difficult mercifulness in slaughtering oxen ; and the needs of science may seem to support the physiological laboratories. Yet one and all fall under condemnation of the sane and pitiful, who believe that the progress of man can advance only through the strengthening of his nobility.

It cannot be disputed that great discoveries



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have come from cutting into live animals. Nor can it be doubted that again and again, in the history of nations and the story of individual lives, great good has ultimately come, notwithstanding the wrong means that seem to have brought it. Yet, though good so often comes out of evil, we dare not argue that evil is justified by a hope that good may come out of it. Neither scientist nor Christian will dare support such a doctrine. Though food is, indeed, got by cruelty to Strasburg geese, none can justify the practice ; though Hunter got knowledge from dissecting the buck, we need not endorse some ways of the physiologist. Even if we grant in large measure the truth of their claims, we may rather forego their gifts than endanger the humanity of our race. Even the cure of disease is not the first point in the health of the people ; and the nicer knowledge of physiological laws will not contribute much to our sanity.



CHAPTER IV

NATURE AND REMEDY

THERE are still brave remnants of life to be found near London,—that dilated heart of our civilisation that sucks into it the country humanity and thrusts its kraken-like tentacles over the woods and the meadows with their simple homes in irresistible, ever-extending destruction. Corn-fields and commons and a parkful of majestic oaks as yet lie between my own bit of garden and the city's roar ; though, as if having abandoned the frontal attack, the vast monster, with bricks for its bones, water-works for its arteries, and standardised education for its nervous system, is slowly encircling to starve me into surrender. In this garden my chief joy is a lawn, disreputable though it be. For it is compound of exquisite botanical specimens, rather than glossy with that monotonous hue of respectability upon which the really gentlemanly proprietor and his lawn-mower pride themselves. Among the treasures of this remarkable lawn I have found a pathetic member of the trefoil family—a poor relation

that works desperately hard for her progeny. As the deeps of life are reached rather by those who labour than by those whose hands are manicured, so in this trefoil I find a truth that is entirely uninteresting to the horticulturist's darlings. For the trefoil is fallen upon evil times. Its own poor body has suffered, and premature extinction has threatened it, because of the soil's unkindness. All good people are patriotic before personal in the presence of danger; and this little trefoil has circumvented the disaster that perennially threatens its species by the discovery for its progeny of a remedy against its own weakness. It has revolted against the law which justifies the mighty in their seats because it has found strength in humility and meekness. It is known as the subterranean trefoil. It is seldom found among good pasture, but rather frequents sandy and gravelly soils and hides in poor herbage, especially in the southern counties. It is called *subterranean* from its habit of burying its seeds. In old books its name is the *long-flowered white trefoil*. Its stem and branches, which are hairy and whitish, trail along the ground, though its flower-heads turn upwards to the sun during their budding and expansion. Constructed originally like the clover for the development of an indefinite number of flowers on the one head, it yet produces but two or three flowers capable of bearing seeds; and these slender fertile flowers occupy the circumference of the head, while certain sterile, ill-

developed failures occupy in greater number the centre. Like other leguminous plants, such as peas, beans and clovers, the subterranean trefoil can live in poorer soil than most things, because it has developed highly important little tubers on its roots. These are concerned, thanks to certain myriad, microscopic, and wonder-working bacteria which they entertain, in procuring nitrogen from the air and oxidising it into nitrates, which of course are essential to seed-production. Nevertheless, this subterranean trefoil, for further nourishing its seeds, has adopted yet other and most extraordinary means that are worthy of careful description.

In the head of the common clover the outer florets, becoming fertilised before the central ones are expanded, wither and droop, so that they hang down on to the stalk and thus allow the younger blossoms more room for the bees in their matrimonial ministrations. In the subterranean trefoil a similar movement occurs, though not so much for the sake of giving room to the younger florets and the bees easier access to the honey, as for the provisions the little plant makes for nourishing its seeds.

As these few perfect corollas wither and droop, the central part of the head begins to develop its imperfect flowers. Each of them consists of a slender upright calyx alone, with five rigid points; and, as it bears no signs of corolla or stamens or pistil, it is sterile. These imperfect flowers are

closely pressed together in a bundle, the five long points of the calyces being also closed, like tied-up fingers. Now begin certain extraordinary movements, the purpose of which is to bury the seeds before they are matured, and secure for them nutriment directly from the soil until they are grown big enough to burst their pods. I have said that, as the corollas of the fertile flowers wither, they turn down and lie closely against the flower-stalk, because they have no more need of the sunlight. So far, they behave quite like the common clover. But here comes a big difference: the little creeping trefoil owns but three fertile flowers, the others being perforce content with ministering because barren themselves. And this ministry is a wonderful adaptation of structures, originally designed for quite other purposes, to the performance of a function for remedying the parental shortcomings.

As the barren central calyces grow and the fertile flowers wither, the flower-stalk begins to grow in length and thickness; and, as it does so, it bends the flower-head downwards and describes the strange movements of rotation and undulation that Darwin has studied and called *circumnutation*. These increase slowly and imperceptibly until the sharp bundle of calyces is pointed perpendicularly over the soil. By the continued elongation and down-bending of its stalk, the flower-head is at last buried upside down in the ground, but with the pods of the fertilised flowers now, of

course, looking upwards again, as they were in their first blossoming and before their corollas had withered and drooped against their stalk.

Thus, in other words, the three fertile flowers, now represented by the calyx and maturing pod, occupy the outside of the head and look upwards, while the barren central flowers, consisting of five-toothed calyces alone, without pods and seeds, are pointed downwards and united into a sort of dibble. And now the plant sets about covering the fruitful pods. The five teeth of each calyx, after penetrating the earth, have become gradually strengthened and lengthened until they are more like fingers ; and they gradually spread out star-like. At the same time the individual calyces separate and spread under the soil and, in so doing, bend upwards towards the surface. This spreading wide of arms and fingers, so to speak, throws up the earth into which they had burrowed ; and the three pods with the whole flower-head sink into the hole thus made and further deepened by the earth cast up round about. Darwin likens this burying of the head to the burrowing of a mole.

But more remarkable still is what follows. The dibble having changed itself into the spreading fingers and arms of a mole, next reverts to a simple vegetable style of office. Each of the five fingers of each outspread calyx begins to swell and turn white ; its hairs grow stronger and more root-like, and the whole structure becomes func-

tionally a root, though it still must be regarded as a sterile flower. In its new root-function it absorbs nitrogen from the soil and directly nourishes the seeds in the pod. The five points of the fertile calyx, in which is hidden the pod with its seeds, also elongate and become hairy ; but whether they absorb nutriment also from the soil or merely protect the seeds from depredating insects, I do not know.

Now we cannot divine why the central flowers, being barren, should turn into roots and play nursemaid to their fertile sisters' offspring. But, clearly enough, the change of structure is instigated by the flower's needs, and is effected by that sense of purpose which so definitely distinguishes vital law from mere material forces. The soil in which this subterranean trefoil grows is poor ; and perhaps the roots of the plant, notwithstanding the little tubers, those factories of nitrates swarming with busy bacteria, which so many other trefoils have erected to remedy the soil's poverty, are unable to satisfy the needs of even the few seeds. And, in order that all shall not perish, some of the flowers abrogate their privileges that they may secure the species' perpetuation.

I shall have need to refer again to this little trefoil when I speak of the Energy of Life, especially in relation to that purpose which is fraught with such significance. But here I wish to point the truth that there is everywhere an inherent capacity in life for remedying misfortune,



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whencesoever it comes. In other words, all disease is the environment in some form or other gaining upon individual or social energies. It may be lower forms of life—such as bacilli—or such accidental disasters as the tyranny of the elements or insufficiency and superabundance of food, or of poisons that threaten vitality. And the contest for survival is but the search for, and discovery of, remedy. The only condition where the individual gives up the contest, and accepts defeat as too pleasant for remedy to be even desired, is the condition of parasitism.

Nevertheless, that Superior Being whom the imagination so often pictures as visiting this planet at the present time, and equipped with the ignorance of a child along with the wisdom of a Solomon, may well marvel at the universal waste of energy in the hunt for remedies. He finds the great majority of the people looking for panaceas, and thinking that, when found, life will be easier and its privileges more apparent. Yet the need is real enough, for, look where he will, east and west, north and south, he finds that men can hardly distinguish between food and poison. For the teapot goes with the bread, the hops with the meat, the poppy with the rice, the whisky with the potato and porridge. Everywhere the bottle is more diligently sought than the mountain stream. Fresh air is too cheap to be valuable; while headache, Nature's protest against her starvation, is fooled into quiet by

the tabloids that every duchess and kitchen-maid carries in her pocket. As if to learn its true value, men willingly pay twelve guineas a week at a sanatorium for the fresh air they so grudgingly admit to their upholstered homes. We may assure the Superior Being that this state of affairs has always more or less prevailed. Yet if he look back through the ages he will find less need of remedies just in proportion as he finds men living more in accordance with the laws of simple necessity. And many a question arises in his mind as to the justness of our estimates.

Again, the Superior Being, listening to the talk of the more earnest men and women in houses of parliament, drawing-rooms and clubs, discovers that all are fully alive to the social sicknesses. Some he finds eager to devise remedies for these ills, though others, quite as fully aware of the increase of disease, believe there is no remedy beyond that inherent in the nature of things to get better or to die. But many, who believe the most in remedies, seem to talk about rather than to seek them ; while those who profess disbelief in the efficacy of drugs seem to acquiesce in, if not to foster, the mischief actually at work in their social customs.

Yet again, this Superior Being is puzzled by our places of worship. Of these he sees nearly as many as drug-shops, though certainly fewer than the palaces for whisky and beer. The latter he concludes are rightly popular, judged

from the people's standard ; for they claim to be the only real antidotes to the burden of life. But the churches give him food for thought. Some, indeed, who go into them seem really starved of life and to hunger for it. Yet the search, the prayer, the reiteration of supplication, are all for remedy rather than food ; and they cry out for it as if believing more in the remedy than in the mercy of its compounder.

But along with this universal seeking for something to deliver them, the Superior Being discovers far less faith in the efficacy of anything whatsoever than the people formerly had, though they seem tireless in the search for the philosopher's stone, catholicons and the *elixir vitæ*. Indeed, he says as much to certain learned men, and they are indignant. The age, these answer, is one of reason and education, of deep knowledge and weighty criticism. They even make him admit that the uprooting of superstition is really a most flourishing industry—an industry, moreover, as satisfactory to its followers as agriculture itself, because the need for it is perennial. Yet though he must allow the claim of these learned men that science, having left nothing to marvel at in nature, compels disbelief in miracle as surely as in God, he finds these very men intent upon transmuting into gold, not indeed base metal, but the souls of men ; and he finds them cutting live dogs into pieces, if perchance they may discover the secret of living sanely and in

conformity with natural law. Despite their efforts, these learned men grieve that fanaticism is still widely prevalent, though the Superior Being discovers that much of this so-called fanaticism is none other than a persistently increasing sense of the relation of life to something transcending its material perquisites. Yet the invention of new philosophies and religions occupies the leisure of many eager thinkers, though they offer nothing that can take the place of the old belief.

Among the saner, peacefuller souls the Superior Being discovers a real vigour in humanity, fully alive to its possibilities and responsibilities. On the other hand, over against this real desire for wisdom and virtue, he weighs the worship of a progress based upon speed. He questions our belief that learning buys more than righteousness earns. He doubts the value of new-fangled laws that at best are but makeshifts, melancholy tributes to the awful disease that besets us. And, in the wisdom of his simple mind, he sees what we so curiously fail to see: that it is to counteract the consequences of this our progress, this our learning, these our laws, that we waste energy in hunting for antidotes to the disasters attendant upon our boasted privileges. He finds us hard to understand, does this Superior Being. For he is driven to admit that neither our devotion to science, nor our hard-hearted materialism, nor even our real sense of duty, is leading us to realise

that the greater part of our life need not be absorbed in seeking to assuage it.

Nevertheless, this general belief that nature will supply remedies when her workings go astray, that, in other words, "there is a divinity that shapes our ends, rough-hew them how we will," is, I think, not altogether unreasonable. It is at least true in evolution. Whether advance be merely due to extinction of the less fortunate, or be accounted for by the inspiration of purpose to overcome, the resultant fact of remedy remains. Hence we believe in it, and accept it as our individual right. Moreover, to the thinking being the desire for remedy is based upon a sense of justice. For, whatever our faith, high Calvinism, materialistic determinism, or that Christianity which believes in the freedom to win salvation by the grace of God, we all know that man cannot, either by natural law or any decree of a merciful God, be held wholly responsible for his misdeeds. All we are, all we hold, almost all we do, is matter of inheritance. We instinctively believe, in spite of Weismann, that our virtues and vices have been, if not originated, yet certainly strengthened for us by our progenitors, for they have bequeathed to us certain tendencies to act one way rather than another. We also believe, the apparent paradox notwithstanding, in freedom of will, in the possibility of choosing in some small measure whether our world shall be the better or the worse for our

existence. Upon the basis of this belief in freedom all the education of youth is built. But we know the wages of sin are paid by the third and fourth generation, and oftener by friends than by foes. And, knowing that these earthly wages do not mete out justice to the individual, we instinctively hold on to our hope in eternal justice; otherwise we are bereft of faith, and the world is altogether undone. Lastly, in upholding the reason of such faith, we are pleading for a principle of remedy that shall balance, somehow, somewhere, some day, the wrongs we suffer and inflict.

And the teachings of science as to Nature's inexorable ways drive many of us to look even more hopefully, because the more needfully, for justice in the weighing of responsibility against the penalties of its abuse. Many great men believe most profoundly in one thing that seems to them as though it must be true: that there lies, deeper in our heritage than our interpretation of its laws can fathom, some consciousness of an unchanging Truth in whose nature our own selves abide. This consciousness is not realised by all; it is not felt in smallest degree, perhaps, by many. It is commonest in the simple-minded whose education has been pure and natural. It is slowly disappearing from the minds of those whose life is swamped with material wealth, marketable knowledge, commercial ambition. This consciousness is one with that of duty transcending advantage, of the need

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of ultra-mundane help, of, in one word, the reality of the religious basis of life. It is commonest, I think, in the wisest ; in those, that is, who are freest from base superstitions, from the greed for short cuts to wealth, or for sneaking by-paths to salvation from disease. It is commonest indeed among those who spend least time in search for vulgar antidotes to counterbalance the misuse of body or soul, although it is in these that we find simple, strong hope in an omnipotent beneficence.

So that we may well account this instinctive belief in eternal Truth and Justice, as well as in temporal remedy, to be natural and true. That which we hold instinctively, the biologists and latter-day philosophers will tell us, is, like our structures and functions, necessarily and only, matter of inheritance. They will tell us also that nothing is persistently transmitted but what proves advantageous to the individual, and thus to the species. Therefore this belief in remedy, howsoever it originated, has persisted because the experience of the ages has proved its utility. Without it we can well imagine, if we believe with Lamarck that purpose to overcome is the secret of increase, that no step in evolution had anywhere been taken. Certainly that strength of heart and ideality of mind characteristic of the better specimens of man, those remarkable for their humanity rather than their muscularity, could never have withstood the

slings and arrows of fortune without this faith : that things gone wrong can be remedied, and indeed are remedied. Consequently it is little wonder that, the wronger men go, the stronger becomes the instinctive desire to find the remedy.

Are we then to assume that it is because the world is more astray from its true aims than ever before, that everybody, having long ago discounted the trust in discredited princes, now puts his faith in tabloids ? Yes, most assuredly, I think. But, it may well be objected, is it, on the face of it, likely that we are really more astray than of old seeing that we are better off than ever before ? Life is easier, food and clothing are cheaper, disease is less rampant ; we are kinder to our own kind, less unkind to lower kinds ; we are better educated ; crime and drunkenness are less in evidence ; punishments are less cruel. In what manner, then, are we worse off in our morals ?

It is not a question so much perhaps of sinning against this or that code as of an increasing determination to frustrate the fundamental law of nature. Is there not in truth an eleventh commandment that remained unwritten because it would appear most absurd that it should need writing ? Was it because of the impossibility of making this one intelligible to the limited sanity of man, be he an astronomer proclaiming the ultimate collapse of the universe, or a babbling biologist arguing that the

secret of life lies in the amours of bouillon and radium, that the ten had to be inscribed upon stone so that, by rule of thumb if not by the light of day, men might keep moving? The unwritten law was this: *Thou shalt live*. For to live, to live really, means the impossibility of breaking any one of the ten.

Now the most extraordinary thing about man as distinguished from every other species with whom, beast or grass, he owns share in a common nature, is the fact that he has choice to do well or ill. This is practically admitted by all. Without it, I say, none would dare to educate his own or other men's children. And because of this power to do ill, in other words to live in opposition to nature, the human world is gone astray, and the commandment *Thou shalt live* is broken. To live is to fulfil the requirements of work, whether of arm or brain, perhaps only of patience or prayer, but still work. If we refuse to work we refuse to live healthily and we become corrupt. This is Nature's edict, as is also the consequent breeding of iniquity, though the third and fourth generation pay the penalty. Yet, as unhealthy living brings disease and its pain to us personally, we seek remedies, even if we leave the future generations to settle our accounts. Only in one event does refusal to work bring no sense of the corruption it entails: when our success is so complete in frustrating our nature that, although we die, we live on as parasites,

robbing of life those who labour righteously. The parasites seek no remedy, desire none. Life to them brings satisfaction in the fooling of it, in the exercise of an energy that kills alike the Cræsus and the slave. And no less do those tainted with a desire for parasitism, who envy such as live upon the labours of others, bring corruption into society. The parasites and their lackeys alike decry reform and the giving of the life to find it. It is they alone who claim a right to contentment, unaware that in taking the life from others they are losing their own.

But, fortunately, not every leech has opportunity of blood-sucking. Yet the taste for it is bred in his lips, though he may live well and die honoured among his kind, so long as the legs of the leech-hunter never wade through the weedy waters of his domicile. Many there be, however, who, because this taste is alive on their lips, can never be content to work for wages. They learn to look upon life as a curse ; they openly deny the truth of the commandment, *Thou shalt live*. If men work while half alive, their work is ill-done. Nature is at once an inexorable task-mistress, and a sweet mother who gives cakes and play-time to those who can win them as the reward of loving their work and doing it. The bad work brings bad wage. And bad wage means either starvation or surfeit and disease. All through the slovenly life, nevertheless, there remains, until the parasitic state is fully won, a saving

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sense of something lacking, something that should have been won. This saving sense is the secret of our suffering. It is the knowledge of an eternal worth in life itself, if only that life might be lived. And the parasitic man who has tasted blood, hangs on to the hope of material ease without labour, though still he whines because of the depreciated health he has earned. He abuses the more successful of his own kidney, and accredits all his failure to them. He even desires their sort of life the more strongly because it seems to hold the cure for his hunger.

So we come to look upon our labour, our means of living, and ultimately our life itself, as evil. Although all men are becoming free, according to the political conception of freedom, never before were so many living upon the labour of others. Never did the earth produce so much food, and never with the need of so few men to till it. The necessities of life are forced from the kindly earth by iron horses with steam for their energy. Vast prairies are tilled, and nothing returned to them, by a few men degraded by greed and spoiled in sense of nature's beneficence by the fallacy that capital is the soul of agriculture and commerce. Labour now curses him that gives and him that takes.

And so through all the occupations of man. The work brings no inherent reward; for it is done not for itself and the joy of life that it brings, but that it may buy means to forget the life that

suffers. Such means are unearned pleasures to kill the precious time, stimulants to whip the jaded, misused body to its hated work, narcotics to help the soul forget its studiously earned miseries. Life lives only in the doing of sane work. The joy of pure living is its wage. Deep in our hearts we know it, though we drown our life to assuage its craving for the right to live and breathe and exult in the name of God. Yet we cry out in silence, and busily seek remedies for the ills that are heaping upon us our destruction. Thus it is that, in this age, so little of the energy of life being spent upon work to secure the needs of life, which work should bring its reward in the gift of more and finer life, there must follow a corresponding degree of sickness in the body, in the mind, in the state. And with it comes the corresponding hunt for remedy.

In like manner men go about seeking absolution for their souls' sickness. They court the priest who can give no true remedy, despite his boasted inheritance of right to grant it, so long as the sin of the refusal to live remains. In like manner men and women, with bodies worn out in their contest with physiological law, seek remission of sins at the hands of the physician. This man may understand as well as the priest the secrets of the diseases he would treat. Both of them perhaps know that, if their advice were taken, themselves and their professions would starve. The wise priest may tell how the true life of peace with God

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is won only by doing more than keeping the commandments, and how the selling of all and giving to the poor involves no asceticism because of the riches that renunciation brings. And the true physician, who lives not for his fees but the work he believes in, must tell nine-tenths of his patients that they are living in abuse of the law of their life's needs. They eat too much and live too little. The same ethical temptation to hold more than they need, more than is their due, lies truly at the root of both Falstaff's and Dives' ailments. Both priest and doctor have but one advice to give if they are true men: to live in conformity with the law of life. They bid us rest in peace by believing more in the eternal justice. They bid us win the good sleep nature freely gives, if treated sanely, and so find regeneration. For these are the golden rules. These are the philosopher's stone, the catholicons, the *elixir vitæ*.

Little wonder that death is so greatly feared, and by the spiritual and carnal alike! Little wonder that we have come to look upon it as something abnormal and awful, almost as though it were disease itself that might be faced bravely if only it could be remedied! Little wonder that in one of the vilest books of recent days a leading physiologist holds out to suffering man hope of a physiological immortality!* Little wonder, with such consolations offered to us,

* "The Nature of Man," by Metchnikoff, 1906.

that so much of our energy is sapped by a cultivation of mortality. But to confound this, our own personal undoing, our refusal to live, our own private wages in death that we win by every breach of the commandments, to confound this, I say, with Death, the beneficent midwife, is foolishness. For she comes in the course of our Mother's needs. She is own sister to that nurse who comforted the cry of our birth. She is near kin to our joy of learning and growing, to our assimilation of the milk of beauty and life. She is even mother to that glad desire of us men and women to transmit onwards to those that shall come the flaming torch. To confound these two concepts of death is poorer than poor philosophy. It is dire insanity. Whether we be Christians or mere children of this world ; whether we hold hope of a personal life enlarging into eternity and blessed with the fellowship of the beloved, or feel that our souls are to be merged into the race's welfare ; our folly is the same in its fear of death. What is natural, be nature God's will or be it nothing, must be part of ourselves, and good or bad according to the life we have led. If death be nature's remedy for the misdone life, death is still good and kind. If death is nature's fulfilling of the well-lived life, there is more of good in it than we know.

Yet is our search for remedy mostly fruitless, though, did we but know the look of it, it would not be far to seek. Laziness in living brings forth

the disease and the desire for its cure : it brings also much blunting of our native understanding. Hence the energy devoted to this search is wasted energy. It is the industry of the beach-comber, who wearily, nigh hopelessly, hunts for impossible treasures rather than work for his bread. The truth is that, while knowing the need of remedy, the patient, the penitent, the politician, will not work for remedy, but pays, prays, or argues for something quite different, viz., antidote. *Remedy* means in its etymology that which restores again, a help to regeneration. Antidote, similarly interpreted, signifies that which is given to oppose, a counteracting force. Most of the hunt for antidote is but beach-combing. On the other hand, true search for remedy should inspire the sufferer with honest hope. Honest hope must bring a regeneration of sanity. And sanity can do no otherwise than make us mend our ways.

But we cannot deny that antidotes, if they do not cure, often allay suffering. The physician is blessed for his anodyne, the priest for his absolution, the politician for his efforts to rectify social wrongs. Each, rightly enough perhaps, gives his physic according to his lights. But each knows in his heart that if he offer the true remedy along with his temporising antidote, he will be accounted unpractical. The sick man unknowingly asks for a miraculous means of condoning his offence, an extenuation rather than a cure. What patient accounts

it wisdom if we bid him leave the hell-fire of the stock exchange and go dig beneath the blue heavens, sowing and reaping and winning health's wage? What neurotic thanks her doctor when, instead of giving a medicine for her nerves, he bids her go find again her youthful tenderness, and let the love of her children drive away the fear of her milliner and those friends whose worth is gauged by smartness? The refusal to live is the disease in nine-tenths of our patients, and the only remedy is to amend the life. So with priest and penitent. What use the absolution when the possibility of sin remains? Why give ease of mind to bear the still spreading sore? Pain, whether of soul or body, is the hand-maid of mercy; and neither wise doctor nor faithful priest will dare allay it so long as there is hope of its compelling amendment. And I would pray the many good people who, because drugs have mercifully failed them, clutch at the sophistries of the ill-named Christian Science, to note the beneficence of pain. If the disease be incurable, let them fill their hearts with hope of an eternal remedying, and the love of Man. If it be curable, let them find health rather than juggle their minds into believing that the pain of a crumbling tooth is not real, or the agony of starved nerve is imaginary, or the sorrow of unrequited love is based upon a false conception of love's worth. With doctor of medicine or divinity, the truth is the same: neither dare put his trust in

antidotes, though his faith in the ethics of remedy is rightly found. And in disease of the state, the truth is the same. Force is no remedy, insists our prophet Tolstoy. Punishment will not cure crime : it only isolates and threatens. Industrial legislation does little ; for it is inspired mostly by fear of the poor rather than by belief that the joy of life is as surely the right of these as of the wealthy. How can we hope to solve the question of the unemployed when neither Liberal nor Conservative party dare work for the only remedy ? * What real patriot does not know that if the land were not burdened by men who use it for pleasure rather than its patient thrift, it would give work and food to hungry multitudes ? The ruin of England stares us in the face because our manhood, driven by land-owners into the towns, is rotting ; because belief in the rights of capital is grinding our people into slavery ; because our worship of respectable

* An examination of the Board of Trade statistics for 1903 reveals the fact that a reduction of the working day on the railways of the United Kingdom by four hours would necessitate the employment of nearly a quarter of a million more men at a cost of one-fifth per cent. dividend on all moneys invested or borrowed. Surely if means of living are found for capitalists, great and small, by overworking half a million fellow creatures, it is not unreasonable to speak of the tyranny of capital ? Every one of these railway slaves has nominally an equal voice with his masters in the nation's welfare ; yet he is but little the freer for this when his only choice of master lies between the capitalist and starvation.

NATURE AND REMEDY

III

parasitism is alike destroying the health of the luxurious and killing hope in the workman's heart. Legislation can no more remedy isolated social diseases than opium can cure neuralgia ; unless, indeed, legislation can find an antitoxin to the septic germs of tyranny and mammon and sloth that have infected our system.

Are there, then, no antidotes ? Has Nature no cures among her multitude of miracles ? Cannot God wipe away sins from our hearts and tears from our eyes ? Is democracy, the rule of the people by the people's law, a paradox, an absurdity ? Will never a dose of castor oil rid us of poison ? Can never a penalty bring understanding of sin ? Will the forcible interference with individual liberty of action in no case benefit society ?

Beyond all things we must be practical if we are to remedy either our personal ills or our society's. Yet to be practical may, after all, involve an understanding of the ideal ; faith in virtue may be the only means of seeing clearly which is the next step to take upwards. Because we cannot make a man sober, that is no reason why for a time his liberty to choose sobriety should not be taken away from him that his children be not born so truly damned that, as the hunger for their mother's milk leaves them, the craving for gin takes its place. Here force may be used as a temporary antidote, though the only remedy lies in making the man free in the

face of his enemy. No legislation for the unemployed can cure the isolated disease, unless legislation can devise an antidote to the greed of the capitalist ; yet legislation may devise temporary measures for relieving the local soreness. Force may be the only means of repelling force. A purge alone may rid us of poisoned food. Yet neither fines nor imprisonments nor hangings will increase the love of man to man and God : in which love alone lies the salvation of body, soul, and state. And the anodynes, whether in form of drug or sophistry, that claim to be remedies may do much harm ; for, by giving false ease to the whole body politic, they help it to forget, and thus endanger the finding of the only remedy—renunciation of poison and recognition of a duty to live in conformity with the law of life. The rich cannot live without the poor ; and they know their weakness. The poor do somehow live in spite of the rich ; and yet they fail to understand the strength this gives them. The law of life, whether in physiology or society, is to do and give good work, to take and give good wage. Herein alone is health and remedy ; and the only use for anodyne is as help to the operation of cure.

If, then, force is no remedy, if palliatives are not cures, if legislation will not of itself usher in the kingdom of heaven, we must yet hold that in natural law are to be found remedy, cure, and antidote. We still instinctively believe that in medicine, in spiritual help, in the voice of the

people righteously impassioned, miraculous antidotes to suffering may yet be found. But they all owe their beneficence to one ideal principle of operation : they strengthen the normal health by making possible the living of simple, pure life. All the drugs that we look upon as antidotes work in this manner : they make it harder for the evil to live. In surgery also the life is given another chance by taking away an enemy that would otherwise prove too strong ; and thus the body lives for another day's contest. Such drugs and mechanical measures are right antidotes, and as different from anodynes and palliatives as wholesome bread is from such mean substitutes as beef-tea. And who shall dare say that the forgiveness of sin shall not wash away the taint of the soul, though the penalty must still be paid to the uttermost farthing, even by the third and fourth generation ? In these matters perhaps it is neither patient nor penitent, no, nor even doctor or confessor, that can vouch for the cure : but only the time that shall come. Who, again, dare deny the possibility of the people yet finding a potent antidote to all the wrongs done them throughout the world's history ? Who that loves them does not know of the slumbering spirituality awakening now in one, now in another, here in a reformer, there even in a prostitute, sometimes even, as recently in Wales, in great multitudes ? Seeing such things, may we not believe that some day the remedy



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will be found that will sweep away the need for state reforms by strengthening the sense of pure living? And this remedy will be no antidote, but a strengthening of life. So long as the people hanker after the ways of the leeches who drain their blood, the rich will defend their dogma that the fit survive and that they alone are the fit. And so long as one member of the body politic is fighting against the other, the overfed stomach against the aching limbs, no remedy, no antidote will come. But the democracy may yet rise supreme to its circumstances and justify the old faith that God is supreme, and man His happy creature; that the law by which alone the people can live without drugs, church-ritual and statecraft, is the law of the kingdom of heaven; that, indeed, to man all things are possible if only he will obey the fine nature within him.



CHAPTER V

ON VALUES IN LIFE

THOUGH not specifically mentioned by the authorities, the chief virtue of fairy-land lies in the peculiar light that pervades it. It is best seen on dark nights, though even in the daytime it adds a quality to the sunshine. Unfortunately, this light requires a quite special gift of eyesight to see by it. Often people who really want to believe in it miss it, just because they think the light itself can be seen ; whereas it can be known only by the otherwise hidden realities it brings into view. And though it is a light that emanates from some part of every living thing in fairy-land, as from the toad's eye and the glow-worm's tail, it serves, just like the light of the sun, not for the illumination of the things most richly possessing it, but for their darker neighbours' sake. It is something like the light that lighteth every man. Children and dogs and birds know all about this light, though they are seldom able to tell us of it. But men and women, with some exceptions found especially among the very happy or very sad, lose the gift of seeing by this light as soon as they find their places in the world.

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One day a little friend, who loved passionately just two sorts of things, her own mother and all the babies that ever were born, told me what she had seen in the twilight. She always had seemed to me one of those elect people who unknowingly interpret for others what they do not themselves understand. What the world would call a plain child with indefinite features, as she came running in from the garden on this occasion, her face seemed to shine as I have seen one great musician's shine when lost in his music. And her blue eyes looked as if they still held a vision that could not be told. She was holding a single white campanula-bloom tight in her hand. She could not go to bed, she declared, till she had told me everything : and her tale was this. In a shadier part of the garden, where the gardener's duties merge into those of the wild things, she had come upon an exceptionally tall white campanula. She vowed it had never been there before, though I knew differently. She said it was a fairy steeple of white bells which were all shining with a light that gave themselves transparency, so that you could see right into and beyond them. Not only this, but the bells were all ringing with music, she said, like dancing and hymns together, such a tune as never was heard unless it was something like her mother's soft singing in the twilight, when she was cuddling her. And the child looked and looked till she saw what it meant. The bells were all little

people, and this was their church, though, she said, they didn't have to go to church because they were the church. They didn't ring the bells, because they were the bells and so happy that they couldn't do otherwise. They didn't light their candles all up the steeple, because they were themselves all shining lamps. Those blooms that were lowest were largest, and shone with some tint of red or blue or yellow, she thought; and the notes their bells gave out were sad and just a weeny bit wailing—as if they had to forget something before they could understand, she added, looking curiously puzzled. And she watched the lowest bell of all, and found he was just tolling, and only one note, slower and slower, as his light shone darker and redder, till at last the flower fell soundless and dead white upon the moss below. She went on to say how she picked him up and kissed him, and she felt his life come into her so that she could understand *something*, she didn't know what it was, much better than her French irregular verbs. And then the child grew tired, the light went from her eyes, and all I could get from her was that she was so sleepy.

What had she understood that she could not tell? What was it? I thought of our human steeples, poor stone emblems of upliftingness that we had to build because we were not the bells and had not the light. I thought of the pride we took in our poor symbols, the money we spent on their building, and at last of the

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blunders we fell into in thinking we could build them cheap of corrugated iron and dispense with the bells altogether. But there was more in the child's vision than this, I knew. In fairyland the soul is outside the body, and not ashamed. In our land we hide our bells within our steeples and ring them but seldom, as if in fear of being thought impractical for valuing more the power that makes things what they are than the things themselves. In fairyland the bells themselves are quite servants to their music, and the lanterns to their light ; which being so, the simple people who build them deck their towers with themselves, for bells and lanterns, and all to the glory of God. They wear their hearts upon their sleeves, perhaps ; we hide them away in deepest dungeons lest the world accuse us of being sentimentalists or idealists. Small wonder if they die of starvation or go mad ! These fairy-people are perhaps saner than we, though they have not learning, and though the strange stories they tell to the children and other uneducated things, such as the beasts and birds, can never be written down or told by word of mouth. Saner they must be, seeing that at least they understand that the value of life lies in the worth of the life that makes things what they are, rather than in the things which we men and women heap about ourselves with such marvellous intellectual assiduity to cumber our living zeal.

And so the child's adventure set me upon a

bigger, if less happy, quest—one that should discover whether it were not possible to regain something of an elemental sense which seemingly we have lost in the dire fight for bread and champagne, clothing and adornment, education and scholastic renown. It made me ask whether our submission to the things that demand our souls in exchange for wealth or poverty, success or failure, wranglerships or wooden spoons, is altogether profitable. Were the ways of the world really practical and conducive to happiness in life? Was there not possibly more truth in what the child saw than in what I saw? Which of us had truer sense of value? Or which, again, was the keener observer of nature, Wordsworth or Herbert Spencer? which the greater politician, Milton or Hume? which the sounder sociologist, John Ruskin or Karl Marx? We would not be fooled—neither by poet nor by physiologist, by seer nor by stockbroker, by priest nor by Fabian. Which of them understands real values in life? That is what we would know, just because we need, as far as may be, to get its real value out of life. To get it must we revolt from the ways of society, or the teachings of great men? Or must we sit on the gate all our lives, now hopping off into one demesne, now into the other?

Or have we perchance lost the elemental faculty of valuation, though it is essential to survival? Like many endowments that, through long lines of inheritance, have been

steadily augmented in quality and intensified in influence, the faculty is more or less instinctive. Yet in some ways it seems less trustworthy in ourselves than in lower animals. As with sight, hearing, and smelling, its keenness wanes as man discovers his intellect. Thus, for a simple illustration, cattle know that the common hemlock is poisonous; but man, though he has learned by experiment the value and dangers of its physiological properties, often fails to distinguish it from cow-parsley or sweet cicely—herbs that, before the country folk had lost their knowledge of the country-side, were much used for salads. Instinctive sense of value is more intelligible, if, at the same time, not less wonderful, when we remember how individual cells of complex organisms have power of choice. The living cells covering the tips of roots appropriate that food from the soil which is needed for the plant they serve. Wheat-rootlets absorb silica to strengthen the straw, though bean-rootlets, growing in the same field, will not touch it. In like manner the individual cells of the human body select from the nutrient fluid supplied by the blood their own particular needs: the bone-cells abstract phosphates; the fat-cells, fat; the nerve-cells phosphorus; the muscle-cells, albumen for repair, carbo-hydrates for fuel; and so on. It is only when physiological operations are marred by consciousness that selection fails. The human baby shares with all other

young things knowledge of where its food may be found ; but as he approaches manhood, he parts company with woolly-tailed foals and top-heavy calves, and proclaims, more publicly with every year of his life, that he does not know what is good for him. Nevertheless, man glories in what neither root-cells nor foals can boast as their privilege : the power of conscious choice. The rootlets and the four-footed creatures, young and old, know the value of everything that concerns their lives. Man, on the other hand, most surely cannot be trusted, notwithstanding his power of weighing and choosing, to follow the manner of life that fits his needs. In simpler words he has but small natural sense of value, whether absolute or relative. Inferior to his horse, he cannot find his way home without noting the sign-posts and the names of the streets. Less sensitive than his dog, he does not know an honest man by the smell of him, but gives of his best to a sharper because of a glittering diamond ring. Even in his sense of the daily necessities man has grown stupid. He will sleep through the invigorating morning air and work when there is no sun to inspire his blood. So little knowledge has he of even its worth, that he will sell his soul for a pot of beer.

With his waning sense of personal value the appreciation of racial ideal is lowered also. Wolves wage war upon sheep for food, and hawks upon singing birds ; but neither quadrupeds

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nor birds seek modes of life that are destructive of tribal or family welfare. When they fight among themselves, as fight they often must, it is chiefly in obedience to the law compelling them to secure the worthiest mother or the best food for their offspring. They know the worth of peace and good-fellowship as surely as they delight in battle when some right object is sought : they know the value of life and its need of increase. But man's intellect and his conscious share in its operations have taught him strange ways that have nothing in common with healthy needs. He no longer desires the wholesomest food or the sweetest mother for his children. Luxuries have usurped the place of necessities, and dowries of wives, in his instincts of value. He will solemnly sanction his daughters' folly when they pinch their bodies into hour-glasses and turn their feet into stilts. He will encourage his sons to live on their neighbours' losses, though there is evidence enough that the real value of any transaction is measured by its mutual advantage to buyer and seller. His misconception of worth makes him live for the massing of money, and beyond its possibility of useful employment. It has usurped the simple understanding that coins are but tokens of work rendered for the exchange of services duly earned. He thirsts for wage that is not payment, and extorts from the labour of his fellow-citizens much of their surplus earnings. As if to balance his loss in higher things, he has grown

enthusiastic for education, though he assigns it little more than a commercial value. And he casts on one side many a precious mother-gift, such as love of justice and delight in beauty, unless perchance he can prostitute them to his personal ostentation. In his craving for a semblance of wisdom that, like his money, may be won without labour, he altogether mismanages his opportunities. He must have mechanical rules of life and definitions of the illimitable. He must have short cuts alike to success and salvation. He packs everything into a nutshell, and then measures space, time, and the love of God by his cranial dimensions. He prides himself that he is a utilitarian, that he must understand the value of things. He tells us that nothing has worth except in its use. Therein, indeed, he shows some real conception of value and need; and just because he is conscious of this much understating he is greater than wheat or wolf. Yet the needs of man he sums up in a ledger. He buries beneath the stones of his heart his grain of mustard-seed, as if in fear lest it germinate and belie his opinions. He is right in being utilitarian, wrong in thinking he has learned the worth of his life. Though superfluity of supply has throughout evolution endangered man's very existence by inviting degeneration; though he has a greater need to work than to win, to hope than to hold; though his desire for higher evolution has ever stood, and must ever stand, in advance of the



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immediate environmental opportunities—yet he unconsciously harbours the belief that parasitism is the great prize of success.

Much has been said during the last half-century of Darwin's law of Survival of the Fittest. It is thought by some to be largely responsible for the waning of manliness during that same period. For science has seemed to justify the dogma of the old Adam that might is right. It claims to have proved that the teaching of the prophets is all wrong. It believes that man with the rest of creation has come to be what he is only because he has been throughout a fighter, and has thrown the weaker to the wall. Perhaps it is really unfortunate that the scientific endorsement should have taken such hold upon people's minds, although it is no new principle to any one who sees by what means success is ordinarily won. When two men disagree upon some point essential to their well-being, they appeal to brute force, although they should know that in so doing they are often but choosing a swine to judge the value of pearls. When two nations cannot agree, they plunge into war, though they know that nowadays victory will probably favour the longer purse ; and they consent to abide by an ordeal of less worth even than brute force. Nevertheless, though many an instinctive sense of what is worthy is lost to man, this one surely remains, that neither brute force nor much possessions will ever adjudicate or institute justice. He in-

instinctively knows, unless he is a prize-fighter or a money-grubber, that the supreme Law has not judged by muscular courage alone, no, nor by skill in strategy, who shall be considered fittest to survive : something is still left of the lost sense of value. He may see also, if he will, that this right sense of an eternal value, transcending the interest of pocket and person, has increased in mankind far beyond any manifestations of it in lower forms of life. He may see that many if not most men who are accounted great among their kind, despite their contempt of mundane success, possess this native sense in fine development. He sees them awaken lazy souls to recognise needs greater than bread and butter. He sees that our rightly prized systems of education do not greatly help such sense of value, even suspecting that pride of intellect is inimical to the instinctive knowledge of spiritual worth. Looking back upon history, again, he should see how the greatest worker the world has ever known, who told men secrets of the universe unknown to the *savants*, lived himself in absolute denial of the dogma that might is right ; he may see how this Man of God understood the higher law of evolution. For even 1900 years ago mankind was taught that the elementary and eternal law which governs the forgotten beginnings of life, orders the on-goings of the life in which we take part, and designs fulfillings for which we hope, has never aimed at the supremacy of the fit in force

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or guile, but of those who give the life that their neighbours may be fitter. Something of such sense surely remains, even though we persistently hide it away lest it tell against our success in the world, and though narrow scientific dogmas appraise but meanly man's will to renounce. Yet now, as of old, the hunger of the many after what the few possess, be it brute excellence, gift of mind, or saintly heart, is the guide to conduct. And if the former styles of worth be the more highly prized by authority, they will most surely be stamped as the standards of worth. It is because the tendency is in this day so strong to minimise the value of our nobler impulses as natural guides to natural value in life ; because the danger of looking upon every ill-disciplined instinct as natural law is so real, and its victims are so tenderly entreated ; because the ignorant like to imagine that Darwin endorsed the old-time dogma that might spells right, and that natural law controverts the Sermon on the Mount ; it is because of these things that I venture to suggest wherein lie the real values in life.

I propose setting my material in the form of propositions rather than of conclusions. I would rather offer clues to truth than formulate rigid questions and narrow answers. For there is an essential difference between truths and scientific conclusions. The latter must present an identical form to every eye, so that they have an invariable significance if they are to count in argument ;

but the former necessarily, because of the different qualities and temperaments of the individuals who look upon them, vary in aspect and weight. Yet, owing to our latter-day submission to tyrant facts that can be measured and appraised, we tend to regard the higher concepts of truth as valueless in the affairs of practical life. In the days before science had smiled upon our native wisdom and threatened it with extinction, a belief in the ruling of the universe by powers unseen often degenerated into superstition. Now, with our truer appreciation of the value of fact, we are driven to the opposite pole of thought, and seek to weigh the supreme laws of life with scales of brass and weights of self-interest. These laws can never be demonstrated, I say, in terms of logical precision, because they present a different worth to each one who seeks to value them. Therefore I offer no more than certain clues that seem to me to lead towards the truth. These clues shape themselves into two correlative propositions. The first deals with the practical conduct of life as ordered by consciousness and understanding. The second makes inquiry into the trustworthiness of instincts that, at first sight, seem often to mislead, and into the validity of loftier impulses whose full significance we cannot explain.

The first proposition may stand thus :

(1) There can be no other means of estimating the rightness of deliberate conduct than by under-



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standing whither it leads. There is no standing still in life. All things, however lifeless or however inspiring they seem, are stepping-stones that racially, if not individually, either give passage across or plunge us into the waters of oblivion. Therefore the things we seek and the things we do are vital, and must be appraised. We must indeed be utilitarian. In other words, we must judge of our means of living, of our ambitions, the hardships we bear, the pleasures we seek, our labour and rest, our wilful waste of energy and satisfaction in sloth, by the ends that, more or less unconsciously to ourselves, are impelling our means of attaining them.

And the second is put thus :

(2) Every instinct, whether ideal or practical, is, of course, originally inspired by some real gain to be won. Even when we cannot see the goal that should enable us to value our desires, we must believe them true guides within their scope. Even though we degrade our instincts to passing gratification, thus losing sight of their real object and forfeiting the reward, they have yet originated in the need of some prospective good. And we dare never repudiate the justice of a desire because we cannot yet see whence it came or whither it will lead. "The passions within us," declared Milton, "rightly tempered, are the very ingredients of virtue." And our higher ideals, our nobler hopes of life's worth—ideals and hopes that persist in spite of their constant starvation

—must in like manner be trusted because of their correspondence with possible attainments. Even our dim faith and flickering sense of an eternal duty are not the less sure guides to a possible salvation—if they be but allowed their natural germination—that they often degenerate into spiritual servility and foster the heathenism that has taken root in all kinds of human soil, fallow and farmed alike.

These two propositions may now be considered at greater length.

(1) By no possibility can things appertaining to life be appraised in the manner of matter and its energies ; for the very essence of life lies in its supremacy to physical law. We can put no mechanical or money value on things that live. We can doubtless buy and sell men's flesh and blood ; we can traffic in women's honour ; we can make children do the work of machines ; but to do these things is not to appraise the worth of life, but the infamy that smothers the real nobility of life. Life is easily directed into seeking its true aim ; it is easily prostituted into denial of any aim whatever. Its worth is incomprehensible in terms of arithmetic ; its worthlessness can be measured by the graves filled with futile successes. Man is something his pockets cannot hold. The worth of his life is measured only by the need others have of him. He lives in degree equal to his power of giving himself and his substance to others. His sense of the truth as

taught by Christ, and not his wealth as judged by his banker, is his justification. Life cannot be given a place in the conservation of physical energy. Life, like energy, cannot cease or be destroyed; for in a racial sense, if not a personal, we know it is increasing. And this is the essence: matter and energy are the same so far as our knowledge at present goes, but life has always been growing, and the possibility of higher perfection. There are always greater possibilities of energy than are accounted for by the body that comes forth. Thus is man's greatness valued, not by what he has or what he does or what he knows, but by the goal for which he is making.

And herein we see some possibility of gauging life-values. Though we can hardly see the meaning or good of our life, though the standard of perfection seems impossibly high, we have in us knowledge of the essential point in life wherein it differs from physical energy. We know that life means function, and that function means, not the interchange of energy with energy, as with light, heat, electricity, &c., but the doing of work with the sense of good to be won. If we remember this, we need scarcely trouble about the ultimate object of life, for the next step onwards will lead us aright, so long as it is a step onwards. Whether my work, guided by brain or hand, is in question, or whether I am impelled

by an instinct or ideal whose reason I cannot grasp, the same means of valuation holds. In the former case it is simple enough to look at the outcome of my work. Will it result in bringing to me more goods than I can use or enjoy? If so, it will, according to the standard of true progress, and not according to that of such as live by enslaving others, jeopardise my life. Will it be the means of saving my children from labour? If so, it will be taking from them the very and only means of progressive life. Is it going to enrich me by impoverishing my neighbour? Is it going to give me excitements and luxuries to supersede the quiet rest when the sun is sinking and the recreation that brings no surfeit? In any of these events, I am obviously driven to work without sense of my own or others' need, and in so doing I am prostituting my life to modes of existence that even the lower animals, who have not reason, as we think, refuse for the most part to justify. More than this: I am undoing the law of life; I am going downwards instead of upwards; I am frustrating the privilege of my inheritance. And in doing all these things I am seeking to value life on a material or numerical basis. To do so implies the most terrible misconception of the office and sanctity of life.

On the other hand, I may take heart of my instincts to labour if I find that every effort I make brings profit to him who pays me as well as to me who serve. If both are gainers, some-

thing more is achieved than what can be valued in numbers and coins. For something has passed between us that cannot be measured, that makes for the increase of brotherhood. Respect of the neighbour arrives, and with the respect a keen pleasure in serving. A realisation of how, even in commerce, giving is richer than receiving, strengthens the understanding of life in a manner few appreciate. Work with its true end in view is life potent in purpose. And service thus rendered is like the grain of mustard seed : it spreads into regions beyond its seeking, and is nurtured by the winds of heaven. What better evidence that man has small sense of his needs than that he works for himself regardless of the purpose of Nature ? The trouble all arises from the vain imagining that he can materialise life, turn labour into coins, and estimate success by the evidences of failure. The heaping of money where it cannot be used in neighbourly service is but the accumulation of dirt. For dirt, we are told, is anything out of right place, anything that cumbars. And nothing cumbars the growth of man's natural love for his brother so surely as riches, which thus are but refuse to the social ideal. If accumulation of dirt is the end of man's doings, it is small wonder that he invents machines to save him the trouble of living, that he enslaves men and women, even children, and turns them into machines whose only use is to breed more dirt. The need of making provision for wife,

children, old age, and the fear of leaving them burdens upon others impels a right and wholly unselfish effort in work. But to labour for worthless luxuries, or that the children may live without work, is a defiance of life's need and nature's inspiration.

The unholy valuation of life and work is sanctioned, more or less, even by those who pray in church. They argue that we must be practical if we would live in the world. On Sunday they fancy they would have followed Jesus and suffered with Him, had they lived during His lifetime on earth ; but on Monday they believe, and boldly act upon such belief, that all His teaching was moonshine. The world, they say (and by the world they mean the few rich and cultured and the 70 per cent. of working people who tend and feed them), could not go on without competition, without due respect being paid to the law that encourages the successes and damns the failures. The world must be fed ; for does it not take from the weak and give to the strong ? The world must be upheld, lest the Kingdom of Heaven come. Nevertheless, although the accredited modes of valuing life and death are insults to nature, men might hear in spired churches and lowly tabernacles some whispers of the real law of life, the supreme law of nature. If the priests, who mumble this law as if fearing it may offend, believed more, would not some see how Jesus came for no other work than this :



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to declare that money computations of life are worthless ; that life means divine purpose ; giving, not holding ; serving and the washing of feet ; unutterable joy in the realisation of life ; true wages to those who labour in brotherhood, to farthing sparrows that chirp in praise, to women who love too much, to robbers who hang on the cross ?

But the question of many who will dispute this line of argument must be faced. " By what law do you determine values in life ? " they will ask. " What seems worth having to you does not interest us, and is therefore worthless. However you take it, life to every one means a struggle for survival. We are children of nature, and we know that our Mother cares for the survival of only her fitter offspring. The prophets have all been enemies to natural law : they are inspired by pity for those who succumb to the strong, who are forced to relinquish what they have, so that those with much may get more ; who, indeed, for lack of fine health, perforce must turn the other cheek. These prophets and saints actually find virtue in unfitness, and most of them, Christ and His disciples, the tender-hearted, the high thinkers and plain livers, have been failures. Have they not been crucified and burned ? Have they not lived in the wilderness, and thus admitted their inability to compete with their fellows ? Is not their meekness responsible for the tyranny of the slave-owners ? Are they not struck down

just because it is known they will not resist? To the weaker ones, acceptance of their inferiority may be the only means of getting some worth out of life; but this is no proof of their ethical excellence, nor argument that their betters in hardness of muscle, in thickness of hide, in subtlety of brain, do not find a real, natural value in the success they worship. Who, in a word, shall determine that nature offers in life only one value?"

Such question cannot be answered to those who ask it. You cannot persuade a debauchee that his life would be physiologically sounder, and therefore more worth having, if he weeded turnips to earn his daily bread. Nor can you make a prize-fighter understand the ideals of one who hates to strike a blow because it must hurt another creature. The millionaire can hardly believe in the open joy that comes of utter trust in the love of God, though even he may see sometimes such faith bringing joy in service, irrespective of wage. But those that live within the kingdom of faith have right of entry into every corner of the earth; they have knowledge of God and understanding of Satan; they know—indeed, have mostly lived through—the glitter of the world, the delight of sense; and, despite their mortal sorrows, they hold in their souls an eternal joy that makes possible and inevitable the renunciation of transient happiness—a joy that offers crusts and stones, contumely and martyrdoms, as its guerdon, and yet is ever growing and blossom-

ing and giving its fruits. Those within the understanding of God, I say, know all things and can judge ; but those of the world, who believe that their life is also worth seeking and dying for, can never judge, because they have no right of entry, because they have not tried and weighed. This much, too, is certain : *that those of the world whose life is self-seeking, and who justify it by appeal to natural law, are spoiling the manliness of the people and ignoring the welfare of the state.* Democracy cannot enlarge its beneficence without Christianity ; while the health of the individual soul and the virility of the race alike depend upon hard working and gentle giving. Moreover, besides those within the spiritual kingdom and those entirely shut out, some there are who hang about the borderland and get a glimmer of understanding. These can also estimate the world within and the world they would fain leave behind more truly than those who justify their unkindness by quoting laws of nature of which they know nothing whatever.

Again, were we in doubt as to which world was winning the best value from life, we need but look at the countenances of their peoples. For upon the faces of those who barter the real purpose of life for money, position, clothes, estates, fame, and the service of men, the truth is graven. The hard smiles, the joyless eyes, the fat discontent of women who drive in the Park behind noble horses and ignoble liveries, speak openly.

The immoralities of their toilettes and boudoirs, their futile search for health, their inanities of converse, make such as know the worth of life weep for them. Their bartering of offspring for their own bodies' elegance and ease, for jewels and pleasure, brings to them that worst of mundane damnation—the sacrifice of maternity on the altar of Baal. Their souls are not the cleaner that no breath of suspicion dims their entire respectability, yet they are befouling life and thieving the children's bread. With the men, the evil is not, perhaps, so obviously stamped on their countenances. For though they break women as children break toys, they mostly have either work or mundane duties to keep alive some feeling of purpose in life ; and they do not for the most part grow so gross in mind, for all their self-indulgence, as their womankind.

On the other hand, the people whose needs are simple and purpose is eternal, soon find, whatever their social status may be, the true worth of life. The life pure in intent is the life rich in power. No obedience to the simple laws of life is possible without submission to the fundamental law of men's evolution, the increase of converse and widening of the environment of love. Whether we regard the countenance of the humble Salvationist or of those among the cultured who give the life to find it, the same thought springs into conviction ; namely, that these know and hold something of unspeakable value.



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And this life that, in giving itself, ever unburdens itself of the weariness wherewith the world studiously crushes its offspring, is the true life, because it leads onwards in such method of promise that each advance is the winning of a goal ; a goal indeed that, when won, points the road in ever clearer precision upwards to the mountains. And even these, though we shall from their heights see lying beneath us the truth of our nature spread out in mystic valleys, rivers rushing from quiet lakes, dawning revelations in opalescent hues, will but point the way to yet greater possibilities. The instinct now asserting itself strongly in many quarters of society for simpler life is absolutely true in its service. It is as true as the instincts of the beasts in search of the sweetest food, as true as the sanity of calves and babies, who know why milk is good and where it may be found. True sanity in life is inspired only by an ever-increasing reason in life, and is fulfilled by conforming with those laws of nature that Jesus gave from the mountain ; it is life used for the help of man, for the love of God, for the winning of freedom and peace. And such fullness of life must be the goal, in the understanding of which alone we are able to gauge values in the means by which we live.

(2) The above conclusions bring us up to the second proposition. It stands thus, that every lowly instinct is inspired by some profit to be won ; and that, granted this claim for our lowlier

instincts, we must allow the same argument to stand in justification of those spiritual aspirations which are, no less than our automatic functions, part of our nature.

This claim needs full consideration. All that we possess, frame, function, and mind, is ours in virtue of inheritance. Nothing is inherited, structure or instinct, except what is serviceable or has proved serviceable in some period of the species' development. Therefore we have no instinct but what is inspired by some advantage to be gained. Whence, then, we are compelled to ask, come those instincts, such, for instance, as those of greed, the love of ease, etc., which lead to our undoing? And this question must be faced before we can establish our second proposition consistently with a belief in the spiritual nature of man.

We are here confronted with one of the most extraordinary paradoxes in the whole history of evolution. Seemingly, for the first time in this history, a being has been produced that has consciousness of itself. Formerly consciousness, we must think, was concerned in the external world alone; now it is centred within, so that the world beyond is coloured by the nature of the individual. The beasts saw things directly and let the impressions received guide their lives. Man sees more things than the beasts could have dreamed of, but he sees them only reflected in the mirror of his own self-consciousness. He

sees them often in a convex, often in a concave, often in a distorting mirror. Moreover, he involuntarily, sometimes wilfully, changes the surface of this mirror, so that by no possibility can he faithfully estimate the value of things.

Together with this consciousness, and correspondingly, has arrived some power of choosing which of the motives, to which all men are more or less subjected, shall be allowed to sway the individual. Thus, with this faculty of weighting the scales has necessarily come a distrust of the correctness of those scales. The man ceases to allow them their old-time use of spontaneity. He loses his own native sense of worth. He can now, he thinks, do all the weighing himself ; by which he often means that he tips the scales to please his passing fancy. He can think, judge, discriminate. He understands the world he lives in through his wonderful instruments of precision, but he never sees it as a whole and direct, never as it is. In estimating the weight of the world and the distance of the stars, the relative size of the atoms and the secret movements of living cells, he loses something of the ancient understanding of value. The old-world instincts seem to work irregularly as soon as his conscious effort is brought to bear upon them. He then, because of the gratification that comes of his instincts' right working, interposes his ill-advised volition, altogether ignorant of what he needs. He seeks the gratification of the means alone, and repudiates

their aim. The means by which our work is done are necessarily material. Life itself is no more than represented or symbolised in its material form : yet man seeks to live by bread alone. He worships the material through which the life shines, works, and makes manifest its dominant power. Such worship ends necessarily in idolatry. What idolatry was to the ancients, materialism is in this day. Both mean the same thing : the mistaking of the symbol for the idea symbolised ; the graven image for God ; the money and clothes, the body and intellect, for the life that uses them to some good end. Were man less gifted and, like lower creatures, without conscious power of choice, he would accept his instincts to obey them implicitly and would reach their goal. Being permitted to temper them with his own control, his only safeguard lies in using them with due sense of their natural purpose. Thus will he exalt them ; or when they run counter to a higher law, he will overcome them. Only in the true understanding of their value will he let his instincts use him. As it is, he often prostitutes his instincts and functions. And, because he debars Dame Nature from her work, she whips her child. It is because of man's nascent freedom and consciousness, that his instincts cannot be trusted as can those of less gifted beings, although these instincts have originally attained their vigour and permanence in virtue of right ends to be won.

If, then, this second proposition holds true, that every instinct is inspired by some advantage to be gained ; if it holds good in spite of the degradation we have thrust upon our instincts in ignoring or misappraising their purposes, it will follow that all instincts are right and pure so long as Man desires the true, natural fulfilment of these instincts' services. And it will be seen that ignoble instincts and passions are not so much an inheritance of evil things as of a tendency to prostitute good ones.

But this second proposition leads us to still more important conclusions. We can draw no real line of distinction between instincts, impulses, ambitions, aspirations, and ideals, so far as they are guiding forces to the attainment of some end ; whether the end be the winning of wage, the hope of serving, obedience to the law of racial increase, or some value transcending all these. And we are compelled to ask what is the original use and fulfilment of those transcendental ideals which move nearly all men and women, some feebly, some miraculously, in their daily life. The greatest among men and women, judging them great from the standpoint of the work they do and their influence upon others' lives, enkindle human progress because themselves are aflame with the belief that man's needs transcend this world's good things. Have not the disciples of Jesus, Socrates, St. Francis, St. Theresa, Oberlin, Elizabeth Fry, and hosts

of their followers in early and latter days, even some now in our own midst, found strength to live grandly amidst the sins and slums of humanity? How? Why? Because they have known the true worth of life. Their instincts, aspirations after virtue—not for its own sake, but for that of God and man—have been inherited like all other gifts. Their parents sometimes, perhaps, have shown little sign of these gifts they bequeathed; yet they held their own inheritance, whence coming no man can tell, of a transcendental understanding. It lay perhaps dormant like the kernel of a seed, yet always capable of germination; and they bequeathed it to their children, in whom it awoke to awaken also dormant possibilities in multitudes. The sense of a transcending value in life has survived in man, is increasing in man, solely because it has ever been essential to man. Without sense of a higher value in life his race had never survived its tragedy. It is this sense alone that holds the hungry working man, the starving child, the broken mother, to hold on to life in the belief that they will some day find its value. It alone binds the saints and weaker men and women to the work they have chosen, though had they less power of love they must faint in despair. It carries us all, even if we know it not, through life. It alone can carry us undauntedly to the grave, though, as simpler beasts are unconscious of time, we fail to realise our immortality.

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Finally, we must take this conclusion as true. Just as surely as no function or structure, no instinct or genius, can persist in heredity unless it serves and profits us ; just as the fact of their inheritance and bequeathal is proof of their imperativeness and worth, even though we cannot measure their value ; even as these points are true, so must it be true that our hopes in a life greater than this one of battling with native meannesses must be based upon the truth of these hopes. No power of inspiration was ever built upon vain imaginings. No desire ever arose but out of the possibility of fulfilment. Nothing ever came out of nothing. As the desire of the hart for the water-brooks is born of true need and the possibility of quenching thirst, so the longing of all men for true joy in life, of many for the realisation of immortality, and of a few for closer union with the Eternal Love, is founded upon an unconscious trust in the sanity of their desires.



VI

THE INDIVIDUAL IN EVOLUTION

RECENT theories on Social Evolution have greatly attracted the more thoughtful, and have, it must be believed, thrown open to us a wider horizon of thought. I refer more particularly to the writings of Mr. Benjamin Kidd and Mr. H. G. Wells. Most will admit that in two ways their teachings may operate beneficially; yet some have reason to fear that in one respect they will prove harmful. The benefits are intellectual and ethical; the former lying in the admission, even if tacit, that purpose is the only explanation of the human race's advance, the latter being found in an endorsement of the old claim that the interest of the individual must ever be subordinate to the welfare of the species. On the other hand, notwithstanding the fact that an acceptance of purpose as the impulse of life almost predicates an over-ruling Reason, to the laws of which man is directly and personally responsible, there remains a disquieting sense of futility in all endeavour. For we are called upon to believe

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that the progress into which we are thrust, as though it were the road that travelled and not we who walk it, is sufficiently explained by prospective ends in which we have no personal concern. Thus Mr. Benjamin Kidd tells us to "regard the evolutionary process in life as proceeding under the domination of a cause which we may designate as the principle of Projected Efficiency.*" Though our ancestors would found great cathedrals which they could never see built, though men to-day spend their lives speeding reforms which they cannot live to profit by, it is claimed that only now have we true understanding of our obligations towards a far-distant *ueber mensch* and an incredible Utopia, and that such ideas, though men of old lived virtuously for nearer advantage, are in this day become our true incentive to right living. We are asked to believe that an unconscious sense of duty to an imaginary race of the future, which will be very different from our own, is the secret at once of the youth's enthusiasm and of the old man's hiding of his despair lest his children lose heart in the unattainable quest. A stoical indifference, we must suppose, to personal advantage will lead us to the acceptation of sorrow and grief as part of an eternal purpose, beneficent hereafter, if cruel to ourselves. "Our lives are to serve God's purpose," says Mr. Wells,†

* *Western Civilisation*, p. 63.

† *Anticipations*, 5th ed. p. 318.

"and the purpose aims not at man as an end but works through him to greater issues." Yet if we accept the new theory and still believe in God, we have no choice between assuming Him to be impersonal and ignorant of the suffering He has ordained, or a God who, calling His elect to share with Him the delights of their piety, condemns the many to despair.

But as it is from the outnumbering failures and not from the chosen few that the future race will come, some better faith than that of the new evolutionist, notwithstanding his teleology, must be found, if hope is to thrive in the heart of man. Without hope there can be no progress ; without some belief in a possible future there can be no further evolution. The unconscious hope of the race's ultimate betterment in intellectual and moral power is, indeed, claimed by the new evolutionist to be our main impulse to advance. But what sort of hope is this held out to us by Mr. Kidd, who lays it down as axiomatic that "it is only from the type of society in which there is still potential the highest military efficiency" . . . that subordination of the present to its future can be efficient? * We had thought our common humanity more productive of devotion, more promising in evolution. What sort of inspiration is this to better living, when Mr. Wells's only hope of a happier society lies in the elimination of emotion from

* *Loc. cit.* p. 45.

our religion and the enforcing of an euthanasia by the State on those who suffer or are otherwise unfit ? *

With such questions before us it is wholly opportune to determine, if possible, the precise position of the individual in evolution, and thus to ask whether we are justified in taking it for granted that, because increase of excellence in the individual leads necessarily to improvement in the race, the objective of human evolution is not the individual but the species.

In examining the rival interests of individual and type, the ordinary thinker finds himself plunged into the deep controversies of biological science. Here he finds two incontrovertible laws—that of Nature selecting the fittest for survival and that of co-operation. The former would seem to justify the individual's assertion of his rights, ultimately in the interests of the species, while the latter demands the relinquishment of personal privilege so far as it will advantage the community. Curiously enough, it is the law of natural selection that is most often quoted ; and its authority is seldom questioned. Yet it must not be supposed that Darwin in propounding it was oblivious of such facts as Kropotkin † has recently and so finely amplified—facts proving that among animals living in communities the instinct of self-preservation is

* *Loc. cit.* pp. 300 *et seq.*

† *Mutual Aid*, by Prince Kropotkin, 190-2.

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inseparable from the sense of co-operative obligation. To overlook the law that compels the individual's devotion to communal interest is to declare a total ignorance of the manners of ants and bees and even of communities lower in biological scale, such as the sponges and composite flowers.* Nevertheless, the law of survival of the fittest has assumed, I repeat, the position of dogma among many of Darwin's followers.† Indeed, it has most immorally been adopted by countless respectable individuals as a justification of inhumanities practised or endorsed by the common agreement of society. But to counteract such vicious reasoning what is offered by the new evolutionist? The selfish man is told that he must live a less indulgent life in the interest of a better condition of society which may one day come; though it can hardly be supposed that such pure disinterestedness as

* *Vide* the author's *Religious Sense in Its Scientific Aspect*. Second edition, 190-2.

† Scientists have imposed dogmas upon the unlearned just as truly as theologians tried of old to deprive man of his inalienable right to thought. While it is absolutely imperative that we accept from science its facts, and indeed its laws, so far as they are apodeictic, *e.g.*, the astronomical, we are not in any way compelled to believe her devotees when they seek to express the laws of life in terms of finality. Note Haeckel's amazing designation of Darwin as the Newton of the organic world, in answer to Kant's assertion that it is absurd to hope that a Newton will some day arise who will explain the origin of a blade of grass by natural laws uncontrolled by design. (*The Riddle of the Universe*, 6d. edition, p. 92.)

that exhibited by the bee will appeal to him and work his reformation. Ethics, as I shall presently argue, must, like everything else, be individually utilitarian, or they will have no means of survival. In the bee there is, it would seem, neither personality, nor rival tendencies, nor possibility of further evolution of the individual. The bee's personality is sacrificed to a mechanical perfection of statecraft, and in it remains neither the vice of selfishness nor the virtue of self-abnegation. The question of survival of the fittest is now matter of minor interest, save perhaps with the drones, whose submission, nevertheless, to destruction without protest, as soon as the bridegroom is chosen from out their number and the community thus served, is singularly unsuggestive of any struggle for existence. But man with personality, with rival tendencies fighting within him for mastery, with hope for something beyond, will recognise his responsibility in life solely through the teaching of advantage : besides a hope for the race's future, he must possess, the student of utilitarian evolution may well believe, some hope of personal reward or fear of personal penalty as definite helps to a better living. I do not mean to affirm that either personal or racial hope is definitely realised, nor that the saints have always been upheld by a conscious desire for either earthly or celestial reward. But it is the law of Nature that right-doing meets some sort of personal reward, and

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wrong-doing with like penalty. Whatever our theory of life, we are impelled by this law of our nature, whether it urge us to go one step higher or allow us to fall into the abyss. And this same nature teaches us, despite the seeming success of the strong who grind the faces of the poor, and of the crafty who pick the pockets of the widow under the very eyes of an impotent State, that most things counted as gain by respectable wrong-doing spell but ethical condemnation and disaster.

But to proceed. Seeing that the new evolutionist's claims are largely based upon the conventional ideas of progress, and that he believes in the ultimate attainment of a higher human efficiency by the elimination of what is harmful and the retention of what is good in our present system, I propose attacking the root of his argument by asking these questions :

1. How far is there any evidence that the racial condition is advancing ? Are our boasted civilisation and progress, judged from the standpoint of man's capacity for nobler life, better work, and clearer thinking, contributing to a higher state of excellence ?

2. What evidence is really before us that the race and not the individual is the objective of that teleology which it is now the wise fashion to endorse ?

- (1) If we ever attain the sort of excellence which the world is in this day seeking and killing

the saner life to attain, human ideals will become expressible only in terms of physical comfort and freedom from labour. The ideals will be at last commensurate with the attainment because there will be no possible hope of further advance to spur men on. That which orders man's evolution, the eternal Law of Life, will have done its work ; and the human species will, in finding perfect harmony or equilibrium with the environment, as many species have done, cease to strive when there is nothing more to strive with, though a restless ebb and flow in worship of a still higher yet impossible efficiency may still persist. The weeds of the prairie have remained unchanged through countless ages because they have established their equilibrium. Many molluscs and fish have not varied since the earliest geological records, for they are perfect in adaptation to their environment. But the species *homo* is not yet complete, if we judge of the constant change of its strife, if not of its structure. It looks as though the mind of man, never satisfied, always hoping, fears an environmental equilibrium, lest his reason for progress should vanish ; and that therefore he perpetually changes the face of his environment and raises new obstacles for surmounting. Thus, increase of speed calls forth new necessities for higher speed. We heap comforts upon ourselves, though we know that life really thrives only in contest with hardship. Luxury induces disease, and then impels us to search for



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miraculous remedies, though we know that, for the most part, such disease is overcome only by re-ordering the misused life. The pursuit of knowledge nobly awakens a sense of ignorance and hunger for more learning, though, because Science is so persistently prostituted to commercial ends, its worth in wisdom and impulse to saner living becomes less evident. Our very strife after progress, so often half-hearted, so commonly unprofitable, seems, I say, to be stimulated by fear that our energy will be sapped unless we constantly refuse to make peace with our servant and enemy, the world we live in.

The paradox between our natural needs and our efforts to circumvent them is curious indeed. While every new invention is an attempt to make life easy, we yet know that life lives only in work. Work in a biological sense—and man is but one exponent of biological law, as the evolutionist always insists—is neither more nor less than the conquering of the environment, “the continuous adjustment of internal relations to external relations,” as Herbert Spencer has it. Work is the process by which life manifests itself and lives. Work is at once the reason and means of life. Nevertheless, this spirit of modern progress aims at but one thing: means whereby both individual and race may be saved from labour. In other words, the progress which our new evolutionist desires for the establishment of an equilibrium is working diametrically in

opposition to the welfare of the individual and therefore of the race ; and this though he believes in the race's domination, realised consciously only in these latter days, by the principles of "projected efficiency." It may be objected that man in his ideas of progress is but doing what other species have done for him and may yet do again. The zebra, for instance, has acquired stripes ; and being easily seen on the plain by beasts of prey he better survived. And man's machine is necessitated by a similar need to circumvent the difficulties of life. The peasant, it may be thought, who first invented a plough to save himself from hard labour, had more time for the development of intellect and artistic talent ; he also proved fitter for survival, though he has instituted a machine-enforced variation of man very different (if, fortunately perhaps, not a new species) from the horny-handed peasant who never leaves his village. But the difference is this : the zebra's discovery, though perhaps it has established an environmental equilibrium beyond which no further progress is possible, has not relieved it of labour ; while man, not content with inventions to overcome hardships and dangers, or with such as will enable the race to cultivate higher gifts lying dormant, is intent upon compelling the environment to save him from the very labour of life itself, though himself suffer, his neighbours suffer, and the race ultimately perish by

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reason of his decadent ideal of progress. The rich man takes care that he personally shall chiefly profit by new inventions, though poor men are herded to feed their souls on offal, though he knows the race must die out if society does not mend its ways. And the poor man's desire is only too often but opportunity for following the rich man's example. Little enough are either Dives or Lazarus inspired by any ideal of a projected efficiency! No: while the zebras discover and foster that which shall make fuller the life by freeing it of fear, the human race seems intent upon discovering that which shall ultimately bring about deterioration of physical form and vigour to save it ultimately from the responsibility of life itself. If what we now call progress is to perpetuate the sort of efficiency required by present standards, then our hopes of pure service in the renunciation of rights, our ideals of love transcending mundane advantage, of truth at any cost, of honour when life must be sacrificed for its saving, must all go because hindering the triumph of commercial progress. To some of us the prospect is so appalling that we tremble for those ideals which we had hoped were stronger than the inventor's power or the financier's skill.

Mr. Wells's *Anticipations** assumes that a

* *Anticipations of the Reaction of the Mechanical and Scientific Progress upon Human Life and Thought*. Fifth edition, 1902.

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racial alteration in the character of man will come about *pari passu* with his economical progress. He takes it for granted that education will make man more intellectual and less emotional, that is to say, more mechanical and more conforming to a rigid standard of excellence. But in all the world's vicissitude of fortune the character of man has remained unchanged in its essential attributes ; even precision of thought has not advanced one jot upon that of ancient Athens, notwithstanding our greater knowledge. Indeed, we take the prophecies of the evolutionist for more than they are worth : we assume that his belittling of our emotional ideals is justified because he is scientific. But is he scientific ? No writer is more scathing in condemnation of the vulgarities and inefficiencies of the irresponsible rich than Mr. Wells. Yet his ideas as to what constitutes the really successful life seem altogether wide of the mark. The mechanicalising of the daily life must, forsooth, extend into social and personal law ; and no place will be left for the indefinable impulses to give more than market value to the needier for their goods, to succour the fallen, to lose the life : not though the higher automatic efficiency of the race be the tempting reward.

Nevertheless, if it can be shown that the number increases of those who are intent upon upright and unselfish living, upon straight and fearless thought, who are not slaves to applause

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and success, it is surely evidence of the worth of ideal, though the dogmas of democracy, aiming only at the commercial happiness of the greatest number, claim that they alone are utilitarian. The one just man in Gomorrah may, after all, be better evidence of righteousness in evolution than the prosperity of a multitude inspired by the Golden Calf.

Nor does the race give any proof of physical improvement, so far as one can judge by historical evidences. The trend of society is to foster the amenities of city life and to till the land by mechanical devices that shall free it of human labour. Though the drudgery imposed upon the English peasant by his and the land's owners has in many cases been too hard a factor in his environment to surmount and profit by, this is no justification of the city's disaster to rich and poor alike. The life in touch with the beneficence and inexorableness of nature will ever be found conducive to finer specimens of man than the circumventions of obligation that the city invites. Look at the Norwegian peasant-proprietors as examples of beauty in form and energy, of keenness in intellect, of devotion to social and transcendental ideals. And these must be swept away, alas, to give place to a comfortable level of machine-served uniformity where men are impelled to their work by no ideal sense beyond that of the bees—the so-called good of the state. The evolution of the

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hive is accomplished. Perfect harmony with its environment is won; their millennium is reached; they are automatic mechanics, and no more. And to such an end in mechanical perfection will our Western civilisation lead us, unless a spirit of truer life, of finer efficiency in thought, work, and communal life, awakes from its slumber and compels us to understand that money and ease are dearly bought when the cost is the life of men. Unless, indeed, our racial type, inspired by its innate ideals, continues to rebel against our decadence, the race must die out, killed by its own efforts to frustrate the only true progress. Unless the type persists in a few in whom the life is not prostituted into luxury, mankind will never live to justify its evolution. At present we can but hope that while the many are called by a devil of modern progress to the work of destroying their race, a few will be chosen to justify eternal ways.

To express the argument briefly, our claim is this: that the modern commercial views of what is worth having in life are in diametric opposition to the ideals of life; that the prevailing notions as to dependence and luxury being beneficial are proved false by the deterioration of physique which now so plainly asserts itself among both rich and poor; and, therefore, that the true and natural means of benefiting the race are to be found in the individual's acceptance of high ideals as the only guides to worthy living. From

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this it must be accepted as a corollary that the ideals in life being the only practical guides in life, whether we consider its worth to the individual or to the race, we must trust them altogether, whether in the promise of present reward or in the insight they give us to a worth in life transcending present advantage.

The whole of Mr. Kidd's argument in *Western Civilisation* is bound up in the assumption that the individual is of small account. "How," he asks, "could the individual be greater than society?" Taking it for granted that this question has but one answer, he declares against the ultimate claim of Western Liberalism as a principle of progress being the claim of individualism.* And again: "The individual, it must always be remembered, has . . . once and for ever ceased to be the factor of the first importance. For as society is of necessity greater and more effective than the individual," etc. etc.† The bee-hive in its corporate efficiency may perhaps be said to be greater than the individual bee, which has no objective whatever beyond the needs of its social laws. But with man and his states the argument does not hold. Man has for all time been making and unmaking his states with a sublime indifference to their welfare, and actuated solely by the sense of his manhood's personal rights. The man is greater than the state, because he controls it; and not a few in

* *Op. cit.* p. 98.

† *Id.*, p. 139.

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this day, because of their belief in man's present efficiency and obligation to ideals, declare that he will fulfil his destiny best by dispensing with the state's officious services. Be this as it may, there can be no manner of doubt that the worth of the individual is greater than that of a community enslaved to mechanical work, authority-bound thought, or comfortable forms of religion. We must judge of man as a man and not as a species, or we shall never understand. Not his classification in the scale of evolution, not even the reduction of his thoughts and emotions to mechanical, utilitarian equivalents, will ever tell what thing is man. But to hold a friend, to help an outcast, to inspire a hope, mean an absolute knowledge of man. And these possibilities are inspired by ideal hopes that will not brook defining.

In conclusion, we may answer the first of the questions before us in these words : Judged by the nobler attributes and possibilities of man, modern civilisation and progress afford but little evidence of real advance. For the mitigation of the hardships of life among the poor and the diminution of legal offences are balanced by the greedy acceptance of mechanical contrivances to save labour, and the growing degradation of life in the refusal of responsibility among all classes ; and by the general increase, among the wealthy and ambitious, of crime unrecognised as such by the law of the land. The old



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ways of God are put out of court by makeshift substitutes. Nevertheless the hand can still do well much that machinery does ill, even though the hand refuses its privileges. Many gluttons can still digest wholesome food, though they prefer French dinners. The love of man to woman still brings forth good fruit, though many reject its divine privileges because of its obligations, and thus prostitute themselves. If there be real progress, as every impartial observer must believe, it is found not in the commonly quoted evidences that can be proved by statistics, but in a growing passion among an increasing few who believe that the ideals of life are the source of man's up-coming and the opportunity of his higher efficiency. It is the individual we must gauge, and not the multitude.

(2) Let us now examine more particularly the claim that the individual is of less account than the race, and that the welfare of the latter is the real objective of the law. In the process of evolution the tendency to variation from the type on the part of the individual is essential ; and two theories in explanation of this tendency are before us. The first, that of Darwin and Wallace, claims that all living things possess it, and that, out of a multitude of accidental and purposeless departures from the type, those which prove advantageous in the contest for survival are selected by the environment. Thus certain variations will survive, and, becoming augmented by use and success,

ultimately will inaugurate new species. This is the doctrine of natural selection and survival of the fittest. The theory was so simple and mechanical that it took possession of the scholars, and certainly the individual's importance in the process was reduced to a minimum. But though facts in abundance were adduced by Darwin * seeming to necessitate such a theory, many others of weighty import were hardly allowed their dues. When it is shown by Darwin himself that at any rate many variations are called forth only by the necessities of the environment, one is compelled to question the sufficiency of his law ; which, by the way, Wallace considers inadequate in the case of man, while such authorities as Romanes, Geddes, and Mivart have practically admitted it to be at least not proven. The alternative and older theory of variation may be thus formulated : every living thing possesses a capacity for variation, which capacity is brought into operation whenever new difficulties or advantages are presented by the environment. It will be seen at once that, according to this hypothesis, the individual shapes the future of his species, and, as its efficient maker, stands infinitely higher in power than the resultant impersonal race. Even if we follow Weismann and hold all variations to be the outcome of sex-crossings, we are still compelled to admit that such variations as happen to be advantageous are

* *Animals and Plants under Domestication.*



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perpetuated by the individual's discovery and use of them in the contest for survival. Indeed, it can logically be argued that every step upwards in evolution, like every physiological process, is purposed by a prospective need of controlling the environment, and that in this control, so far as the individual profits, the race must necessarily improve.

No species shows any tendency to efficient variation when the conditions of life are stationary ; it is only when these become modified and the equilibrium disturbed that effort is made to restore the balance by adaptation to the altered surroundings. It may be loosely argued that the environment is responsible for variation in this case, and not the individual ; but the environment is but a passive factor in the process, and does no more than offer opportunity to the individual to show its power. And this is the essence of the dispute between Huxley and Herbert Spencer. The environment proposes, but the individual disposes his faculty of variation to meet the proposition. No student of botany can overlook the extraordinary ease with which structures common to many species are variously modified in function and appearance to meet the requirements of altered external conditions. Thus a plant during unusual drought assumes, for the sake of retaining its moisture more efficiently, the characteristics of other species permanently growing in arid districts.

Such temporary alterations will presumably become permanent in the species if the dry atmosphere persists.* European sheep when established in the West Indies change their wool into cooler, goat-like hair in three generations.† Instances of purpose dominating structure abound in the history of plants ; and while they perhaps have no bearing on the theologian's theory of teleology, they proclaim in unequivocal language the fact that variations are, at any rate sometimes, purposed. I cannot but think that the more we study the law of adaptation to the conditions of the environment, the more we are driven back upon Bishop Butler's claim that, every work of nature being a system, and everything in nature or art existing for some obvious use or purpose, we have no alternative but to account the system as teleological in operation. And although with him the realisation of final causes rests on theology, Butler, like the scientists of all time, grounded his principles on experience.

The newer evolutionist, it would seem, has discarded the older Darwinian theory ; and rightly. But he has not embraced his own faith with the courage of conviction. The race

* "The Origin of Plant Structure by Self-Adaptation to the Environment," by the Rev. George Henslow. Int. Sci. Series, 1895. The claims against indeterminate variation put forward by this distinguished botanist seem to me unanswerable. To him I am much indebted.

† Darwin, *op. cit.* vol. ii. p. 102.

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marches onwards, he assumes, towards a prospective goal where, I suppose, the equilibrium with the environment will forbid new endeavour, and where the millennium will be won. With an unrealisable sense of his obligation to this "projected efficiency" we must assume that man labours and suffers: he urges his children to serve the state and the ethical law rather than their passions and pleasures; he invents machines and willingly becomes a slave to their tyranny; he believes in and fights for that democracy whose ideal is the greatest happiness of the greatest number; he lives in the strength of hope that offers much yet brings nothing, and is fortified by faith that is but fallacy; he dies and is forgotten, his children knowing how he suffered that they might live, as they in their turn must live in the hope of some worth in life for those who shall follow. Yet man in his very conquests must realise injustice in the eternal Law, while his devotion to the ideal of duty for duty's sake, being personally unutilitarian, must die and cease. This cry of duty for duty's sake is altogether as ridiculous as that of art for art's sake. It is on all fours with the faith of those who assume that land exists for the encouragement of its owners, who believe that railways stand for dividends, who look upon hospitals primarily as contributing to the necessities of the medical profession. Nothing is worth aught but in its service, and such poor incentive to right living

as a sense of abstract duty must surely fail. Virtue that finds its reward only in a possible future of the race is, from the individual's standpoint, unutilitarian. Though no follower of Hobbes, regarding man as a machine actuated solely by ideas of personal gain and loss, the scientific moralist now looks upon ideals as due to a sense, if ill understood, of the needs of the race. Yet as practical help such ideals must fail altogether, for it is only in the hope of personal, individual good that we keep the light in us. To explain man's hope of ideal fulfilment—he knows not why, how, or when—as an unconscious striving for the ultimate evolution of the Superman or for the establishment of a social equilibrium where good and evil, effort and sloth, hope and despair, will all be banished, must necessarily fail in its object, seeing that each individual seeks for present joy in life for himself and those he loves. And this search is both natural and virtuous, despite the degradation of our ideals as to what is worth having. Most will assert their right to make the best of life, come what may to the Superman. The morality that is based solely on a possible profit to the race in its distant future cannot be utilitarian; for probably no variation from the type, no effort after larger environmental privileges, will survive in the originator or offspring unless some advantage, however small, immediately accrues. If our personal hopes are personally unprofitable,

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how is it that they ever arose? Why have they not long ago vanished? * It must be chiefly because of their real value to each man in whom they thrive—a value transcending the possibility of estimation by material standards—that they still dominate the spirit of the race, notwithstanding the vulgar multitude who do not care to recognise the forces that are supreme even to their automatic ineptitude. If, then, man's hopes have such just substance as to be inalienable factors in the shaping of his evolution; and if the very essence of such hopes is advantage to himself and to those who, because of his affections, form a large part of his own life; we are at liberty, if not compelled, to believe that the immediate and ultimate concept of life is the individual man. The individual indeed is the creator of the species.

As a matter of fact, the study of human history has been a study of those individuals who have arisen above the dead level of the race, representing the best or the worst that is in it. The collective effort of the race seems often to be concentrated upon entirely false ideas of what is desirable, and that equally with the prosperous and the outcast. Their goal may be little better than a millennium of parasitism, where structure will

* The theory that utility is the only principle that can endow stability upon variations is too complex to discuss in this place. Though commonly held as an essential in their creed by many Darwinians, and endorsed especially by Wallace, others, notably Romanes, hotly dispute the claim.

be permanently degraded to balance the ease of a mechanical life. Nevertheless, despite stunting of form and lowering of aim, despite the threat of physical degeneracy of which physicians know more than the public dream of, that essential something in life which gives each man hope to tackle the environmental tyranny, which makes him labour for children who often bring more sorrow than joy, which drives him to believe in the value of life notwithstanding its subservience to inexorable conditions, that essential something is a seed of miraculous possibilities sown in the soil, stones to some, hotbeds to others, of environmental opportunity. And, be it noted, notwithstanding the decadence that seemingly prevails, individuals arise again and again, supreme to the almost universal failure, and in multitudes from every class. Those who best and personally know the social wrecks, the disappointed, the drunkards, the prostitutes, and can compare these with the classes most successful in their sacrifice of truth for ease, understand the worth of the essential something that still makes the individual man worth more than the destiny of the race. Progress has always depended upon the triumph of individualism over the rule of social law : *e.g.*, St. Francis, Wycliffe, Luther, over the church, Giotto over Byzantine restriction, Galileo and Darwin over schools, Blake and Burns over pedantry, and so on. Even now we can see how the great practical scientists, Edison,



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Lister, Marconi, by refusing to accept their limitations as final, have changed the face of the world. In the lessened suffering and the easier intercourse instituted by these, they let us understand how the individual man is moulding his race's future. Genius is essential ; and for lack of it the race would long ages since have settled into an equilibrium of subservience to custom and authority which, if untempered with inspiration, and even if promising peace between man and nature, spells but comfortable and disastrous stagnation.

Yet seldom in human history has one man rising above his fellows inaugurated a new racial departure in his progeny. The prophet stands alone, and by the voice of truth rather than by instituting a new variety of man calls forth higher possibilities in the multitude. Not even in this age of better education and a common property in knowledge can we boast finer intellects or more devoted lives than lived on the earth two or three thousand years ago. We do not outshine St. Paul and Plato ; we do not eclipse St. Francis and Socrates ; we do not cast into shadow Shakespeare and Homer. And, so far as the success in winning a millënnium of environmental equilibrium is concerned, we must not forget that many species have found it, worms, insects, and crustaceans, in the permanent satisfaction of parasitism, where the purpose of life is comprised in absorbing food not

won by work and in breeding a horrible progeny. If the future of the race is to be judged by the lives of the multitudes and the machines that make an excess of population possible, the best we can hope for is but a condition of social and individual stagnation, though it be one of mediocre harmony with the environment. But while some passion for nobility, some possibility of relinquishing rights, some hope for the fulfilment of purpose, remain to encourage the few, we may yet believe in the worth of the man who shall come. So far as we can judge from experience, which is the only possible basis of thought, we must hold to it that the immanent Cause of life and life's progress is more intent upon producing individuals to justify eternal ways than a race that shall, to spare men the labour of living, relinquish its privileges to mechanical contrivances ; and this notwithstanding the fact that the lavish waste of individual lives, as contrasted with the selection of a few for the propagation of the species, seems to justify the idea that nature is interested only in her types and not her individuals who make them. Man has interfered grievously with the simplicity of natural law ; he has become intent upon justifying the unfit in their determination to survive. In a wholly normal yet vitiated understanding that the individual is of vast importance to the species, he has determined to forget his obligation to the law that brought himself to pass, whether for social,



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racial, or altogether transcendental purposes. Even if he succeed in establishing a race whose excellence will be measured by their possessions and the power these give of preventing the survival of worthier types, we can hardly believe that any species will ultimately profit by the substitution of man's new machines for God's ancient ways. And such considerations seem fully to justify our belief that one man, at once free in his inspirations and obedient to the laws of his nature, is of more account in the eternal Intent than a multitude of state-bound, bee-brained puppets, though the possibility of wrong-doing be banished because passion is dead.

In conclusion, let me assert once more my belief that the new evolutionist is helping us more than a little by insisting upon man's obligation to transcendental law, and by making it clear that the individual as well as the race are unconsciously labouring under an impulse that looks beyond present welfare. But whether the subjugation of individual desire to racial efficiency correctly designates the spirit that inspires man with his noblest thoughts and actions is open to question. That man is under obligation to the Law from which he proceeds and under whose domination he labours with something of freedom, something of hope, with great capacity for joy when his life is in harmony with the eternal Intent, and for grief when the

law's purpose is frustrated, we are bound to concede. But, seeing that the individual is so great a force in making the race, may it not be that the old faith of man, an intuition inherited along with all his gifts of structure and function, is nearer containing the whole truth than the new dogmas of natural selection and racial efficiency ? The idea of an eternal beneficence is larger in scope than that of creative reason ; for it includes all possibilities, future betterment of the race, present hope for the man.



VII

THE DESTINY OF MAN

DURING the last half-century new methods have arisen of studying the old problem of life, thanks to an increasing precision of knowledge. Darwin's mighty array of facts have left no alternative to the philosopher but to accept the doctrine of evolution as proven, even if we are not yet really enlightened as to the principles that underlie the increasing power and complexity of species. As a matter of fact, the biologist has but followed the way pointed by the psychologist. For Hobbes had, two hundred years before, formulated a law of survival of the fittest ; upon which basis is developed, it would seem, modern ideas of utilitarian philosophy, especially when exalted, as by J. S. Mill, into considering the quality of the people's happiness rather than a mediocre quantity as the desideratum. Bentham's dictum of "everybody to count for one, nobody for more than one" is but heresy in the light of Natural Selection. Yet, in spite of the public endorsement of the evolutionist's

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theories, if not of the socialist's, they fail to convince; because, being fundamentally necessitarian, they ignore the moving spirit that is the very antithesis of automatism. Concerning this moving spirit we know no more than the ancient philosophers knew; yet the need of assuming a purposing cause to be operating throughout all evolutionary manifestations gives promise, with our ripening knowledge, of becoming paramount in our philosophy. And, if we admit this because it seems to be based upon an ever-deepening observation of facts, we may well inquire whether the due weighing of proved phenomena will not throw some light upon the personal destiny of man.

But before entering upon this immediate subject, we must substantiate the principal clue, as it appears to me, to such an inquiry., viz, the sense possessed by all men, in greater or less degree, of obligation not comprised in the rule of self-interest. It shakes from their grip upon our minds at once the Darwinian law and the utilitarian precepts, and therefore it is often discounted. We speak of it as the *religious sense*. It is often assumed that those mental attributes whose origin and persistence can hardly be accounted for by any advantage offered in the contest for survival need not be regarded seriously. This is especially the case when matters of faith are under criticism. The sceptic asserts that the foundation of all religious

systems is superstition ; but even if we admit that the rites and observances of elemental peoples are often degrading to the concepts of religion, we are no nearer understanding how such ideas as the propitiation of demons or the invocation of natural forces have originated. We have no evidence that the worship and punishment of fetishes is not as much a prostitution of an earlier nobility of idea as the ceremonials of some modern Churches are diametrically opposed to the Christianity they claim to represent. So that we are in no way deterred from asking whence has arisen this almost universal belief of the simple-minded that man stands under obligation to some ideal transcending his meat. But the sceptic's position will not, of course, be shaken by our arguing that to dub a man as instinctively superstitious in no way explains the fact of his superstition ; and he finally seeks to account for man's frailty in clinging to unprovable ideals upon his utilitarian hypotheses. Thus, he may claim that religious ideas have ever been fostered because offering to the crafty a means of obscuring their selfish ends. Man instinctively respects virtue, even if he cannot attain it ; so he lavishes approbation upon the pious, and is easily deceived by a hypocritical assumption of intimacy with the gods. But this theory cannot explain the attitude of the simple-minded, who, thanks to their faith alone, find it possible to hold on bravely to a life other-

wise unbearable. So, while fully admitting the profitableness of faith to such persons, the utilitarian psychologist finds that he still has not accounted for the extraordinary phenomenon of an erroneous idea, having no counterpart in factual experiences, becoming an integral part of man's nature and a potent force in the evolution of all that is best in the worthiest people. He may, if he please, tell us that ideal notions are but an inheritance, though perennially enduring, from bygone ages when ignorant priests, greedy of power over the still more ignorant people, invented their methods of spiritual tyranny. But the insufficiency of this theory is no less obvious; for the evolutionist is compelled to assume that, whereas every quality possessed by man has endured solely because making him fitter in the contest for survival, certain attributes, unutilitarian from the racial standpoint in that they further the survival of the less fit, seem to indicate an almost universal lack of sanity in the species *homo*. Why this inference? Because, if either theory is correct, man has imagined that that which, were he sane, he would know to be delusion and falsehood, is more profitable than straightforward understanding. In brief, the rigid evolutionist, regardless of such a paradox in his argument, would cast on one side all transcendental hopes either as inexplicable or erroneous, and thereupon, especially perhaps because they are encouraged by the

men to whom he stands in scholastic opposition, the religious and imaginative, refuse to enrol them as subjects worthy of investigation.

But let us be quite fair to the evolutionist. He may tell us that we are wrong in imagining that craft and deceit cannot be profitable. He will tell us that the assumption of hypocritical religiousness for the sake of disguise has its justification and indeed counterpart in humbler species. Thus, the female of a certain butterfly in Cape Colony, the *papilio merope*, has protected itself by assuming the colours and appearance of the unpalatable *Danaïs escheria*, found in the same region, to protect itself from lizards and birds that prey upon it. Even better instances are found in the groups of insects known as Mantidæ and Phasmidæ. These assume an innocent likeness to leaves and sticks, the better to attack other insects or to hide from their enemies. Some of the Mantidæ actually adopt the form and colour of flowers, to allure butterflies and other creatures to their toils; while one has successfully likened itself to the white ants on which it feeds, the safer to devour them. In the Phasmidæ, the walking sticks and leaves, all their evolutionary energies have been devoted to mimicry in self-defence from predatory birds, etc., and so great is their power of likening themselves in colour, shape, and immobility to vegetable structures, that their eggs actually resemble seeds and deceive even experienced eyes.

enemies on leg or wing
mission to that fear while,
while, on the other hand,
attack openly, and thus learn
to sleep half the day in the
storing up their agility for
when they can seize their
tear it to pieces. That the
profit by falsehood must be
not follow therefore that it
continue to profit if it deceives
its victim, and conducted to
the full conviction that it
pretended to be. Thus we
in securing either food for
its species. No ; if the
proves profitable to the whole
and the hook-nosed ecclesiastical
the real acquisition of faith
some so potently that they
another may eat, and find
in submission to their power.

if because of its value as an educational factor we are compelled to admit that the religious sense is probably based upon intuitions founded on fact and truth, we may well make inquiry as to the origin and objective of this sense. In simpler words, we may quite scientifically dwell upon the origin and destiny of man, believing that our religious sense is a normal institution closely concerned with the whence and the whither of our evolution.

But we must be precise in our definition. What do we really mean by the term *religious sense*? Briefly, we may affirm it to be a feeling that life comprises purposes and obligations which transcend the possibility of demonstration. Such a definition fully admits incertitude; and it is just because of this incertitude that some put all ideals of faith without the pale of thought, though others claim that their very inability to test the commercial and scientific value of ideals gives incentive to a higher style of investigation. Mr. Benjamin Kidd accepts this sense of a transcendental obligation as a potent force in our evolution. He calls it, not the religious sense, but the principle of projected efficiency, and indicates how it dominates the race in a determination to increase the general efficiency of those comprising it. Thus it is prophetic. But it has no concern whatever with the ultimate welfare of the existing individual. So that, up to the present development of

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his system, he has not fathomed the hopes of man.

If we are to inquire as to the destiny of man, the religious sense, whether it is based upon hopes of individual evolution or is merely a consciousness of racial compulsion towards a higher efficiency, obviously becomes a point of first import in our deliberations. For we must admit that this religious sense, which in many minds has assumed the authority of a religious consciousness, is a potent force in our development. That all life unconsciously submits to the behests and needs of some overruling Law, in whose prospection the individual is not in his personal life concerned, must be granted. The universal desire for offspring, for instance, brings in its gratification a restriction of liberty and an obligation to self-denial. It is the outcome of a need transcending personal advantage. It is the submission of self-interest to a law higher than the individual, even when exalted to the position of man, has any conscious knowledge of. This sense, I know, is not the sense of religion as ordinarily understood. But I doubt whether any real line of demarcation can be drawn, on the one hand, between this sense and the most rudimentary evidence of compulsory devotion to communal welfare as exemplified in some insect republics, and, on the other hand, between this communal piety and that consciousness, manifest in multitudes of wholly sane men and women, of

obligation to the Supreme Power. It matters not that the new evolutionist formulates this sense in different words and with a different interpretation of its meaning. It matters not if he tell us that the religious consciousness is no more than a realisation that evolutionary forces are not concerned with present needs, excepting so far as they develop the possibility of an ultimately greater efficiency. The new interpretation of teleologic evolution is of less interest than the fact that it accepts without question this religious sense—a sense, that is, of the need of serving other ends than those of mere utilitarian and present-time welfare. The time is passed for regarding the less worthy men who successfully fight for their own hands as representing in their success the fundamental law of life. We begin to judge once more of the laws of life by the humanity that is in man. In the inspiration of this humanity we see wise men devoted to the apparently hopeless task of bettering society ; we see men giving up all that is most worth having in a mundane sense for the sake of individuals who, from an evolutionary standpoint, may well be considered worthless. Painters call us to look upon beauty and learn how we who are poor may grow blessedly rich. Poets proclaim that the common delights of life are but rubbish to those who grow in understanding of the Law. Heroes give their lives for their country ; saints give their last crusts to those hungrier than themselves ;

children even will take the punishments earned by their fellows. Throughout all the squalor of life, the greed of stomach, the thirstiness of well-filled pockets, the filthy prostitution of noble offices, we see shining here and there, in city and meadow, palace and hovel, signs of that grace which is the inspiration of our right living and progress. And in whatever manner the light shines before men, we may take it as evidence of this religious sense: as evidence that in each and all abides a knowledge, consciously or unconsciously proclaimed, that we dare not, nay, that we cannot, win increase of life unless we are willing to give all, if need be, for the sake of the law which has brought us into being.

And this sense is no new creation in man; it is innate in all life. Every faculty and function we possess is developed by a process of growth, slow or rapid, augmenting as new demands are made upon it by the hardships of the environment, remaining stationary when a balance has been won between the creature's faculties and its means of obtaining sustenance, degenerating when gentler conditions demand less strenuous efforts. All such changes, progressive, stationary, or retrogressive, whether manifest in the needs of the individual or in its subservience to the needs of the race, must be inspired by one and the same ever-dominant principle of life. And this principle of life can be no other than the

Power that made of life a passion for increase in conformity with the very law of its being. True it is that we find in life a perpetual conflict between the need of increase and the environment that gives means of increase. But the conflict necessitates an ever-widening fortitude in effort, and submission to the one eternally abiding principle of life. Most Christians assume that only man can be inspired by faith to right action, while the new evolutionist seems to think that only in these latter days has man realised a transcendental responsibility.* But the sense of obligation transcending advantage is no newer than the most ancient parentage of man. Principles which are now making for racial progress must have been in operation since the very beginning of life or evolution means nothing. Whether we study human biology or lower strata of life, there neither is nor ever has been anything new under the sun. The ovum from which each individual man has proceeded was what it was in virtue of the possibilities within it of ultimately producing man. Each limb and function lay germinally waiting growth and development from the moment of fertilisation. And the embryo was what it was, possessed the power of anticipating and preparing for its

* Mr. Kidd writes as if now for the first time in the history of the world the present realises that it lies under the domination of the future. "We stand," he says, "at the very pivot of the evolutionary process," though he admits that "there is no clearly defined boundary line."



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ultimate needs, because inheriting from immediate and distant parents those very faculties which, though perhaps hardly expanding into power in the parents of earlier days, now, thanks to new environmental facilities and demands, give so rich a promise of blossom that they look like things of new portent, as though they had indeed arisen *de novo*. In spite of the failures of democracy, it is because, and only because, the innate spirit of religion in the individual man now has a collective voice that the tendency of modern legislation—I do not speak of every recent enactment—has been in favour of the suffering multitudes rather than of the more fortunate few. It is the individual spirit, after all, that is making for the greater efficiency of the religious sense.

Now it is just because we do not believe that the religious sense is a new understanding, rather regarding it as a larger development of an ancient plant, now perhaps justifying some old-time promises of fruit and flower; just because the religious sense is as innate in our very nature as our limbs, as our instincts of affection and duty, though most men, thinking they do not possess it, fail to realise how much it possesses them; just for these very reasons it is possible and necessary to make some sort of conjecture as to the origin and destiny of man. For the meaning of man's destiny is the secret and inspiration of his religious consciousness.

Nevertheless, the rigid evolutionist may well ask how we can account for so strange an inheritance as that of perception into the needs of the future. How have we acquired the hope of a life beyond the grave? How is it, even, that we are inspired to do work that only the future state will profit by? How these, when the experience of all our progenitors is that flesh returns to dust? Yet such personal hope is common to the simple-minded of all ages, and to most who are not too learned to love deeply. How can such hopes, the evolutionist will insist, be inherited, seeing that the future has never been experienced by our ancestors, and seeing that all they have bequeathed to us is the outcome of needs and the satisfaction of needs in the contest for survival? How, to put it in briefest terms, can we have any sense of obligation to forces beyond the ken of our race's experience?

These questions are based upon an assumption that is not warranted by our crude knowledge of fact, for they take it for granted that we can have no practical consciousness of the Power to which we stand under obligation, and in whose ministrations we live and move. But is it too much to suppose that there is in every living being something that stands in most intimate touch with the Power that has evolved it? Is it sophistical to think that in each creature there lives some sort of rudimentary understanding of the truth upon which its being rests? No

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evolutionist can object to such a surmise when he remembers that, according to his cherished theories, man possesses nothing but what must have had its representation, potential only or manifested in but minute degree, in every upward step from the primordial beginning—even our intellects, our passions, our faculties of renouncing our desires if thereby we may enhance the possibility of future good to our species. If he will not admit this claim he must hold to the doctrine of special creation, which he repudiates. Is it illogical, I therefore ask, to imagine that, along with every faculty we inherit, we have a dim, undecipherable sense of the process of our evolution, and that this intimacy with the process, by which we have become, necessarily leads man to understand, however obscurely, that it is by a continuation of this same everlasting process that he must continue to progress? If we are not fools enough to think that the process of creation has culminated in ourselves, is it not possible that, feeling we have come to be what we are by overcoming, in earliest beginnings as in this day, the hindrances that prevent the realisation of our inherited possibilities, the unfolding of the past necessarily gives our minds, all unconscious of the reason, a clue to an unrolling of futurity? Man in his unconscious instincts may, after all, be a better philosopher than his boasted intellect will allow him to be: he may have sense that time has no parts; that the past were nothing

but for its future, as the future is unthinkable but for its past ; that both are one with a bigger meaning of an ever-evolving present ; that all time lies in the palm of God's hand. I do not for one moment mean that we have instinctive understanding of the law of evolution because it has been in operation through our own embryonic beginnings. But I do think that there must be in us some acquaintance with the mystery of the Law that has made and is making us ; that inspires us, as it inspired our fathers of old ; that impels us to our duty, as it compelled feathery mothers to sit patiently upon their eggs in the hope of a projected efficiency in their chicks ; that teaches us now, even as it first instructed mammals to make out of their life-blood milk for their toothless young ; I do think that in man there is something of a definite understanding that he must obey the law of life irrespectively of advantage to himself, and that this instinct or intuition, which is feeling rather than thought, is the rudimentary sense of religious obligation to the Power that needs us and makes us for ends we know not of. I do mean that, as man grew in understanding from experience, he began to guide his life with some sort of dim consciousness of the law of his nature, and that therein arose in him the conflict between that service of self which is needed to secure individual existence and that service demanded by the eternal law if man is to win his destiny. I do mean that, as little by

little he yielded to this dim understanding and learned to act upon its inspiration, he won some perceptive instinct of his relation to the Power that had need of him, and that, as he and his children grew in strength of understanding, in strength of power to choose first the social needs rather than the personal, then the transcendental rather than the immediate social demands, they were able to hand onwards to their offspring with increasing surety this growing consciousness of transcendental obligation, which has in our own time, as in the times of our ancestors, produced the mighty among men. And I believe that a steadily growing sense of the needs of the future, to which Mr. Benjamin Kidd has so finely compelled our attention, has its origin in a comprehension, ever increasingly keen, of our personal and racial dependence upon the eternal Power in us, which we serve or disgrace as we will. It is only in the few that this sense has come within sight of the possibilities yet in store for man ; it is only the few that have come near touching the garment of the Supreme. Some of these few are of simple mind ; some are found among the learned. But it is not by persuading the hungry that the law of evolution affords any satisfaction for the voids in their hearts that we shall inaugurate a truer understanding of the religious sense and the destiny of man.

But let us see if we cannot find a more definite explanation, and through it a better

understanding, of our relation to the Eternal, and thus a clue to our possible destiny. By a truer interpretation of the great Law of Life, as manifested in its chief creature, man, may we not, perhaps, gain some insight, not only into the purpose of things, but into the nature of God Himself? We know indeed more than our fathers knew. But we have turned our privileges to little account if it makes us question the justification of their faith, and forget that this faith carried them through the sorrow of life with an uplifting of heart and head. Yet if we in this day know more than our ancestors, we ought surely to understand more definitely the relation in which man stands to the Law, and feel more clearly the trend of his destiny. Yet it must ever be remembered that the saints say they need not our knowledge, because they know, and that to the simple-minded the insistence of duty is sufficient for their needs, because only obedience can reveal the truth.

But let us commoner souls examine more closely the law of heredity in its general bearing, and particularly in relation to the sense of our subordination and responsibility to the Supreme Cause of our evolution. For the mystery of our heritage and its up-tending amplification of organs and functions has never been solved; and the almost universal assumption of a supreme, all-controlling, inexorable law, held by the materialistic to be impersonal, unconscious,

will-less, but by the spiritual to be God, is hardly contestable. In a brief examination of the facts of heredity I will conclude my plea for a larger conception of man and his personal destiny than our science can measure.

According to Haeckel's fundamental law of biogenesis, each fertilised ovum, whether of man, insect, or worm, passes during its incubation through all the stages that had led to the evolution of the parental type. "The embryonic development is an epitome of the historical development of the species. This condensed and abbreviated recapitulation," etc. etc. In such words he tersely describes the period of embryonic life, and the theory has been accepted by the evolutionist in general. Countless ages may have laboured for the production of the parental type; but the individual passes through each essential change during the period occupied between the fertilisation and the hatching of the egg, or covered by the mammalian's pregnancy. It is in the study of the changes that take place in the embryo, perhaps more than in any other evidences, that the law of evolution is substantiated. In the process of evolution each pair of parents brings its offspring up to that point of excellence themselves had attained, endowing them with the power themselves were given, of variation from the type. This gift, though varying extraordinarily in different species, lies dormant probably in all; but it becomes potent

in the few who, awakened from the potential to the kinetic by the realisation of need, are impelled to tackle the environment to its further subjection. Peculiarly well can we watch this process in man, with his restless ambition, never content with mere means of existence. Nevertheless, although all species may inherit the faculty of progress, even if some, because they have found an easy system of balancing their own needs with their environmental opportunities, never use the faculty, they also probably inherit the possibility of adaptation to an over-luxurious environment and of destroying their most priceless gifts by parasitism. Perhaps even the parasites have in them, though deeply sleeping, some sense of touch with the Supreme, and through it still a possibility of going upwards once more and winning a destiny. Be this as it may, the essential point during some portion if not the whole of every individual's life is the possibility of progress. The fertilised ovum, whether of man or dog, is a mere microscopic mass of organless protoplasm, yet virile with the sleeping potency of function; it is what it is because imbued with the power—unknowable as physical energy, undemonstrable as physical fact—of dog-virtue. And the ovum of man is what it is because, its inheritance being of man, its ultimate manhood is possible. This then is a fundamental fact in biology: that all the living thing is and has—even the power of going

one step beyond the parent—is matter of inheritance. Backwards we can trace our inheritances through the myriad years of evolution from child to parent in ever-simplifying forms, until we arrive at the primordial ovum from which we must suppose have emanated all living forms. And the primordial ovum was what it was solely because of the possibility it held of ultimately producing man.

Now, if all living things are what they are, both in attainment and in the possibility of higher excelling, because they inherit the power of life, whence, we are compelled to ask, has the primordial ovum of all won its inheritance?—an inheritance, we must remember, which holds in it the ultimate possibility of producing man, along with all the lesser species which have preceded his creation and branched off to right and to left of the upward-extending tree, some in steady increase of excellence, some to reach an equilibrium, some to be blotted out as worthless. And our science like our philosophy teaches us that we must father the Cybele of the ancients, the primordial protoplasm of the moderns, upon the Primal Cause of the Universe, the Eternal Reason of things.

And this Cause of Life must be essential life itself. Otherwise our studies in biology are meaningless, and life has emanated from that which could not give it an inheritance of purpose to become. Life is not only an inheritance ;

it is what it is in virtue of its prospective possibilities. Life exists not for what it is, but for some future, immediate or distant, which every smallest particle of life is intent upon seeking. It feeds in the purpose of self-persistence, it breeds in prophetic, if unconscious, knowledge of the needs of the Law. Therefore we may assert our right to believe, on the strength of information given us by men who know facts and have discovered certain laws of facts, that even the primordial ovum which began our evolution possessed its power of ultimately producing man because of its inheritance, from the parent life, of those very attributes in which it would ultimately discover its power of manhood, still strong in its possibilities.

As a corollary to such a conclusion, it must be admitted that the original parental Reason which cast the miraculous ovum first upon our cooling earth may be measured for what it is by the ultimate possibilities of that ovum's perfection in evolution. As the offspring, eternally evolving, will become, so was the parent when he begat. Thus man has not evolved from a meaningless mass of protoplasm, but from a particle of life intent upon winning the possibilities of its inheritance. Man, we may fearlessly assert, has sprung from God.

This is the answer to the materialist's reluctance to attribute the power of man to God, lest he be accused of anthropomorphism. And it should be sufficient ; unless indeed man, who has been

evolved from the eternal Reason, is greater than this Power. What ! the men who people the man-heaps called cities ; who fight to save them the labour of living ; who force Nature's energy to mar her beauty and to anticipate her bountiful providence ; who drive to hell the women they love, and use the children of their brothers as even they dare not use their own ! Is each one of these, because he possesses also something of consciousness, love, and the power to deny himself that his neighbours may live, greater than the Godhead who has produced him ? Your scientific man nowadays believes in a Supreme Power, but is too orthodox in his views to perceive that it is necessarily greater than man in all man's virtue ; he still smiles upon the anthropomorphism of the superstitious and ignorant. In our humility we dare not, perhaps, paint God in the colours and form prompted by the suggestions of our anthropomorphism. But is this valid reason for denying that man may be theomorphic ? Our conception of the Eternal Cause must, if possible, be something infinitely greater than man ; yet must we therefore deny that some men, great of heart and mind, who have lived and taught and been slain, because they made their followers discontented with the cruel march of commercial progress and pharisaic success, show us in their persons and lives something of the nature of God ?

And if the almighty Reason has willed that

man should work out his own evolution and so win the life that is offered, we may know that the Eternal is greater than man in all man's attributes and virtues, and that in personality and love, in mercy and power, in faithfulness, the eternal, ordering Cause cannot be less than its creatures.

This being our faith, we may leave the destiny of our souls, which have so greatly suffered and rejoiced in the labour of life, to a more merciful understanding than our own.

If God, who must be infinitely greater than man, has used His creatures for high purposes of projected efficiency in their race ; if in the process of nature, which is God's power, these creatures fail and are therefore doomed by the mundane law of utilitarianism ; if they have power to suffer because they possess the life of the Eternal ; if they inspire their fellows to renounce mundane advantages because of needs higher than the world's ; if, after all, they are the means through which the eternal purpose of things will ultimately be won ; then the abiding Power of the Universe, who loves with the same love that man inherits and bequeaths, who is pitiful and redressing of wrongs, even as man has throughout his evolution been a reformer of his world, the abiding Power will never do things in ways smaller than the best among men would do them. God will not repudiate His obligations to the individual man in His ambition for man's species. And in His hands lies our destiny.

VIII

THE ENERGY OF LIFE

(I) THE CONTROL OF MATTER

ONE of those prophetic utterances that seem unimportant to the stony mind, and yet a germinal of deep-rooted and wide-spreading significance to the fertile, is the exclamation of William Blake that *Energy is eternal delight*. Few will deny that joy is found in a realisation of intent. Life is inconceivable apart from the doing of work in some form ; and this doing of work in physical as well as vital things is energy. It is the transmutation of the potential to the kinetic, the winter to the spring, the sowing to the reaping. And when this energy is in active operation, and in such wise that its triumph over circumstance is secured, then arrives the reward of such energy in the consciousness of joy, delight, not measured by time or weight, and therefore eternal. And as no fine work is done without some consciousness, if not understanding of the work's purpose, the labour of the worker is as truly joyful. The energy of life is no other

than the process of overcoming formlessness and incorporating the ideal with the visible. It is a warfare with forces and substances that must be enslaved and put to fulfilling the purpose and need of increase. Energy that has no sense of object ; that drifts aimlessly ; that makes men live and follow like sheep, gathering wool and blindly treading the path that leads over the hills to the slaughter-house—this is not truly energy, and it brings no delight. Such is but illusion of energy—a centrifugal dissipation rather than that holding together and concentration of power which brings purpose to pass. Energy is the conflict of life with matter, the breathing of the living spirit on the face of the waters of formlessness, compelling inanimate things to serve life's needs in manifestation, expression, and work. Such a definition will not be denied by the severest physiologist. And it tallies no less surely with man's own understanding of his life.

I propose discussing the Energy of Life in three essays. The first will deal with the Control of Matter, the second with the Control of Structure, and the third with Man's Control of his Environment.

As boys and girls we have, time and again, dropped stones into smooth water to see the upstart of the still surface into concentric waves that spread in widening circles. If a cork lies in the path of a wave, the wave does not carry it

onward, simply because the wave does not carry the water itself onwards. The travelling of the wave over the surface, we thus find, is something quite different from the travelling of the water itself ; it is not the water, but something momentarily embodied in it, leaving it, that is the effective motion. This something is a mode of transmitting energy, for the sake of clearness we may speak of it as the Form of the Wave. When our toy boat is carried out to sea, though the big wave-form is lowered the helpless boat is not, and though themselves came tumbling to the shore to our feet, they could not bring our treasure home.

But, having realised this fact, we used to wonder why, if the wave-form does not itself carry the water onwards, it should break and tumble and rush up the shelving shore or shoot over the upstanding rocks ; and we remember that sometimes the ripples made in smooth water by casting stones beyond our lost paper-boat would actually, if slowly, bring it ashore. Both these objections really confirm our definition of the wave as a mode of transmitting energy. For the water rushes up beach or breaks on rocks only when it ceases to be embodied by the wave ; only when, that is, the form's motion onwards being no longer possible because the shore's interference breaks it, the motion of the form through the water is communicated to the water itself, which then, and then only, travels onwards.

Similarly a paper boat, standing in the way of a ripple's onward undulation, may appropriate the force of a wave-form ; and its movement may thus be communicated in small measure to the boat itself. Thus was our toy recovered if we were patient enough in creating wave-forms behind it by skilfully casting our stones. In the breaking of the wave and the rushing of the water up the shore we see that the wave is a force, embodied and carried onwards by communicating itself to successive portions of fluid, which fluid it does not carry onwards, but leaves behind, and only at the last point, when there is not sufficient depth of water left for this further transmission of itself, changes its energy to motion of the water itself, which then, for the first time in the course of the wave, rushes onwards. If we have a straight row of billiard-balls touching one another, and hit the ball at the one end of the line, the ball at the other end is the only one to move onwards, the intermediate balls standing stationary, although they have truly communicated the motion onwards. So it is with the wave ; it passes through the water, but moves the water onwards only at the last point of its course. If the billiard-balls were fluid particles surrounded on all sides by like fluid particles, they too would communicate motion in form of wave. Let me repeat that the wave is simply a form passing through the surface of the water ; though the wave travels, the water does not move onwards.

And the form of the wave is the abstract idea of the wave, and is conceivable in idea as distinct from the material of the water, which it assumes, we may say, for the sake of manifesting itself in concrete form.

This illustration concerning the relation of idea to its concrete manifestation is important. It makes the simplest-minded of us true Platonists or idealists ; which, so far from unfitting us for practical understanding of things and laws, really enables us to find the only clues. To ignore the ideal is to evince a form of ignorance quite special to this age of science : it may be everywhere observed in the tacit claim of the idle and the overfed that the material and visible embraces the entire nature of things. On the other hand, to discredit the obvious and tangible, because matter is merely servant to idea, is to make unpractical visionaries of ourselves : it harbours the philosophical crudities of the Manichees and Gnostics and of their latter-day parallels, the Christian Scientists.

Form, then, is the essential idea of a thing ; it embodies the material for manifestation and expression. And if form has this power to compel material to its service, we may say that form is expression of energy, the means of work. Of course, form may express also the work done, as, for instance, in a shell or a statue. It is then but a symbol of movement or life that had been, and no longer is, an actual accomplishing power.

Moreover, we shall now soon understand that the Energy of Life itself is form generated in increasing obedience to the Impulse that, first and last, sent it coursing over the face of the formless waters.

"For of the Soul the Body Form doth take,
For Soul is Form and doth the Body make."

As soon as we realise how the form of the wave but passes through the water, raising and depressing its surface, alternately assuming material and relinquishing it, and thus making obvious the fact of energy seizing upon the water, we shall readily grasp a point that it is essential to understand. That which is true of physical force is no less true of vital power; and, as the physical force is transmitted into wave-motion, so vital power is transmitted into the phenomena of life. By remembering the relation of the wave-form to the material it assumes, we shall more easily understand the idea of vital energy assuming material garb and compelling it to give expression to the fact of its reality; we shall better understand, I say, how idea governs vital phenomena and assumes the concrete for asserting its reality. In other words, as the form of the wave in its undulation assumes and discards successive portions of material as means of expressing its existence, so any form of life expresses its vital idea in realistic phenomenon solely by passing through its form material for the manifestation of itself and for doing its work.

It is popularly said that we entirely change the substance of our bodies in every seven years. This may not be a literal fact, yet it is true that for no two seconds do our bodies consist of the same component particles ; it is fact that within the space of a certain time the material of which we are composed is entirely altered. Notwithstanding which fact, our individuality does not change. We are the same persons from the beginning to the end of our life, however much our character may alter, our appearance may change, or even our intellects crumble away. And, when we speak of the soul, we signify this something which persists throughout all material changes. It is the creative idea of us, the power of life within us, the impulse to our being, that is this soul ; and this soul, we may say, in order to express itself, in order to put itself into communication with other beings like itself, in order to do its work, assumes to itself a body. This statement of the undulation of our vital energy, of the alternate assuming and casting away of our material garb, is not mere theorising, but is actually the basis of all physiological operations. We use oxygen of the air to burn up the food we take into the stomach, and the result is work accomplished, be it in muscular action or in mental thought, in accepting impressions through our sense organs or in the mere keep-up of our body heat. And in like manner the very frame of our machinery is continually being worn out

and replaced by new material, minute by minute, year by year, until this vital energy by which the process was kept moving is grown too tired for the sleep of the night to renew its energies. Then the soul passes away into the domain of the unfathomable. And for my part, realising the fact that no physical energy or mode of motion is ever destroyed; and believing that vital power governs, and indeed possibly creates, physical energy, as will be presently argued; believing these points, I cannot hold that this higher power which dominates can die, while the lower, which is under its control, cannot be destroyed. If we cannot experimentally prove that life is immortal, we must yet on logical grounds believe it to be so.

And this brings us to a point that we must not evade. My opponent who believes that vital phenomena are only physical, and take their place in that interchange of the various forms of energy known as the correlation of physical forces, thinks that I am defeated by my own weapon. He says, accepting my illustration of the wave, that, just as the form of the wave is no longer able to subsist as such when it reaches the shore, but is dissipated in actual movement of the water and the pebbles, or is flung back into the sea, so the human wave of life breaks upon the rock-bound shore of death and manifests itself in the physical forces of its body's disintegration. And his extension of my analogy

shall be admitted, either if he can prove it by such experiment as, being a man of science, he must claim to be possible, or if he can show that I am wrong in the conclusion I shall presently offer, that vital power, so far from being merely a force interchanging with other physical forces or modes of motion, is dominant of these forces, and that it is never governed by the laws of numbers and dimensions. My imaginary opponent will be straining the analogy beyond its measure if he persist in his argument ; he will be guilty of the logical sin of using metaphor for argument rather than for illustration. We may not force an analogy beyond its contents. The relation of the form of the wave passing through the water is not strictly analogous to the assumption by vital energy of material for the sake of fulfilling its purpose, though it holds up to a certain point. Beyond that point we find it insufficient. Why ? Because the wave, as such, does no work ; not even in a mechanical sense, even less in a vital.

Now, in mechanics the word *work* has a definite value ; and we had best consider it before going further, because, I think, it helps us to understand the difference between the phenomenon of the wave and the phenomenon of life. If a body is set moving in space it continues to move for ever with the same velocity, and for the same reason that, if it is stationary in space, it remains stationary for ever. This inability to alter its condition is called the *inertia* of matter. The moving

body may, of course, be brought to a standstill by other bodies opposing it, as in the case of a meteor rushing out of space into our atmosphere, where its velocity is arrested by the friction of the air and converted into such intensity of heat that the meteor is vaporised and dissipated. Or the stationary body may be given motion by the attraction of a moving body approximating it, when the latter is partly arrested and the former takes its movement into itself. But, whether the body in space moves or is at rest, in neither case is any work done. It is only when a moving body increases its velocity, or maintains its velocity in spite of opposing forces, that work is done in a mechanical sense.

Now our wave does no work. It travels through the surface of the water solely in virtue of the initial impulse of the stone dropped into the water. It maintains its inertia. In its passage it does no work ; it merely at the end of its career divides among the many pebbles on the shore the same impact that was communicated to it by the one pebble at its outset. Where, then, do we find work in a mechanical sense ? We cannot find a better example than the steam-engine. A locomotive in its work either increases its speed or maintains its speed against the resistance of the weight behind it and the air pressure in front of it. And yet the work it does is no more than is comprised in the energy transformed by its machinery. The heat generated by

the burning coal is transformed into the force of steam-expansion, and the pressure of this is changed into the piston-thrust and the rotation of the wheels. Thus the work done in increase of velocity, or in the maintenance of the speed against the wind's opposition, is precisely measured by the energy represented in the heat generated from the combustion of the coal. Thus our engine does work, while our wave does none. And the wave, because it does no work, cannot represent life, except in so far as both are awakened into form by some initial creative impulse. Life is at once the increase of effort and the sustaining of effort against the resistance of mortality. And these are the conditions of living work no less than of mechanical work. Life is not inertia: that is to say, it does not move in virtue solely of an initial impulse; it does work.

But now it will be opportune to ask whether work in a purely mechanical sense and work done by vital energy are really the same thing. They are so only in very limited sense. The mechanism of our bodies is strictly analogous to that of a locomotive steam-engine. The mechanical work we do is seen in the contraction of our muscles by means of which we raise weights and carry along our own body with its many burdens. It is seen in the feeding of ourselves, and in the digestion of our food. It is seen in the uses of our sense organs and in the work of our brains, in the storing of fat for body-fuel, in the

storing of mental facts for brain-food, in the storing of hopes and high desires for soul-invigoration.* All, even these last, we may well believe, hold their correspondence in the energy generated in our bodies by the combustion of the food put into our stomachs with the oxygen drawn into our lungs. And so far we stand in the same relation to physical energy as the steam-engine ; all the work we do, in carrying, thinking, hoping, finds equivalent in the physical forces transmuted in our bodies. And if this at first sight reads like the statement of a mere physiologist who regards the highest attributes of man as a mere ratio of self-interest and discretion, I beg for patience until I prove that knowledge of physiology need not make us materialists.

But if this comparison of an engine with a living body is accurate, how does life differ from the inertia of a wave, or its work from that done by an engine ? How is the soul of man different from the flame of a candle, which is but the expression, the outward and visible sign, of the work done by the combustion of its elements ?

The answer is very simple and quite true. The engine, once fuelled and started on its wonderful process of transforming chemical action into steam, and steam into the travelling of its weight, pursues its course along the steel rails of its

* The officers of the Salvation Army well appreciate this last point when they give food to the hungry in their halls before they are thought to be in a fit state for repentance.

destiny without purpose, and subject to any chance disaster that may oppose it, unless the control, the fuel, and the water are in the hands of a skilful driver. If mechanical work is represented by a locomotive, life may be compared to the same engine under intelligent control. And the controlling force of life, be it seen in man or the humblest of life's manifestations, is *purpose*.

If we human specimens of life can effect no work except through those laws of mechanical combustion and transformation of energy which we share with the steam-engine, we yet hold in us, as the very essence of life, purpose in all our actions. I do not say that we, any more than lowly animals and plants, are conscious of all our purposed actions ; but I do say that the processes of life are all purposed, all stand in virtue of a definite end in view. Let me repeat. The point at which the wave and engine, as analogues to a living being, fail to justify themselves is this : the former represent physical forces that are purposeless in themselves, owning no allegiance to any higher law ; whereas, as far as my observations instruct me, the whole point about vital as distinguished from physical energy is that it stands solely in virtue of purpose ; that it exists in the definite intent of a process to attain that which it has not, or to be what it is not. We eat, we drink, we move, yes, we even breed, with purpose in view, though for the most part it is the law of our nature and not our own

intelligence that holds the reason for our actions. Every function that is possessed by any animal whatsoever is such in virtue of the need of attaining something which is not yet attained. The explanation of any physical phenomenon is retrospective ; the explanation of vital processes is prospective. Heat changes into electricity because electricity is convertible into heat, but life evolves in growth because of its inherent prospective possibilities. The limits of physical energy are known and demonstrable without possibility of cavil ; but the power that is life never rests and has been eternally evolving higher possibilities in control of its circumstances, in rebellion against the tyranny of its environment. And this comprises the whole theory of evolution. Life is growth ; in the individual, as we see him, only up to a certain point, but in the race illimitably. No physical energy shows growth, no physical force shows purpose to attain a better state—which is growth ; no physical force shows intellect—which is consciousness of the particular purpose in operation. There is no evolution, I repeat, in physical force, notwithstanding its perpetual change and interchange in method of manifestation. Consciousness itself is but the slowly developing recognition of our personal or social needs in obedience to the laws of our impulse to strive after them. Instinct is the unconscious obedience of the law that purposes, however ignorant or automatic

the exponent of that law may be in its action. The striving after the fulfilment of some needs of which the lower animal or vegetable is all unconscious, as, for instance, in mating that the race may be perpetuated, is but unconscious obedience to the law ; and the law, rather than the individual, thus superintends its operations with obvious, purposed intent. And if the intent of the law in compelling individuals to breed, although among humble beings the two sexes have no understanding as to why they desire each other, is so obviously operating with the purpose of perpetuating the race, I do not see that we need draw other conclusions with regard to the process of evolution itself, viz., that it is purposed. In other words, the advance in the perfection of structure is unconsciously pursued only in obedience to an impelling law working with the intent, the definite purpose, of betterment; that is, of growth towards the attainment of some ideal of an ultimate perfection. And if there be such definite indication of purpose on the part of the law, I do not see how we can, with the knowledge we own, draw other conclusions than that the law must possess wisdom and beneficence. And these are attributes which all who labour in conscious obedience to the law's impulse have ever assigned to the Deity. If these thinkers, workers, learners, are the simple-minded, their faith is founded upon trust of a right instinct; if they are the philosophers,

their faith is supported and enlarged by rational interpretation of this natural, inborn gift which perceives the simplicity of the Primal Cause.

We are now come to this point in our argument : though the actual work done by our bodies is mechanical and corresponds exactly, as the physiologist proves, with the amount of food consumed, yet there is some power in us that, in measure differing in different men, controls the work done. This power is again purpose. The essential idea in vital as distinguished from physical energy is the purpose revealed in all life's manifestations. And when the life increasingly conforms, in conscious and willed effort, with the inborn purpose, its exponent acquires individuality and freedom. When the power of purpose, I repeat, is used for big ends that further the law, in consciousness of the value of means and the eternity of ends, then is man truly more than a machine ; he is a lieutenant of God.

(a) THE CREATION OF ENERGY

And now we must advance a step further and very important. I intend showing how vital power is actually creative of physical force, notwithstanding the fact that the work we do is mechanical. I am well aware that the proposition is heterodox ; but it is not, therefore, unscientific or insusceptible of logical

demonstration. And, though I cannot now complete the argument without discussing freedom of will, I am going to make it quite clear that Life, even if it manifest itself and work through the control of physical energy, still creates that energy in some measure. So far as I know, this fact has hitherto escaped the recognition it deserves.

(i) To make the evidence clear, we must consider another mechanical idea.

Suppose a ball is thrown into the air. The force given it must be greater than the force of gravity which draws it back to the earth, or it would not rise. As it continues to ascend, its gravity, dragging upon it continually, gradually diminishes its velocity, until an elevation is secured where the velocity is exhausted; then the upward movement is arrested. For one moment, when the ball ceases to ascend, and before it has begun to fall, it lies motionless in the air. All the way it has been storing up, we may say, power of gravity which has been prevented from operating by the opposing upward thrust. And as soon as the highest point is reached, although the ball is for a moment stationary, the accumulated force begins to act and to bring it down again. As it falls, its velocity and force steadily increase until it reaches the earth again with precisely the same impact as that given to it when it was thrown upwards.

Suppose, again, that when the ball has reached its highest point, where it is momentarily at a standstill, something is interposed to prevent its falling, as, for instance, if it lodges nicely poised upon the bough of a tree. We might think for a moment that the power stored up in it is entirely obliterated, or it would show itself in some way or other. But this is not so. The moment of rest between its ascent and descent is but indefinitely prolonged; and, if the wind blows and moves the bough from under the ball, the stored up power asserts itself once more, and it falls, reaching the ground with precisely the same force as if it had never been arrested. Now, to this force, which, we may say, is locked up in the ball till liberated, it has been found desirable to give a different name from the same force when in operation. So in the former case it is called *potential*, and in the latter *kinetic*. The *potential* is force that could if it might, and the *kinetic* is force that can and does. The *potential* is energy sleeping, the *kinetic* is energy moving.

(ii) An apple, growing on the tree and kept from falling only by its stalk, has stored in it the power to fall as soon as the stalk shrivels and weakens, or as soon as the wind snaps it off. As it hung on the bough its gravity was potential; as it falls the gravity becomes kinetic. Ever as the apple grew bigger it was storing within it more energy for falling as soon as this should be

possible. And this being the case, it looks as though the apple-tree has actually created the energy which it thus stores up in its fruit. Now we know that physical energy, whether in form of gravity or heat or electricity, may change, but is never created by mere physical processes, and is never destroyed. Consequently, with the object-lesson of the apple's growing weight before us, we are confronted with the question as to whether vital power can possibly create physical energy. We must admit that the force stored up in the increasing weight of the apple is but power accumulating and taking form. The ninety-five per cent. of water, of which the apple practically consists, is as truly carried up from the earth's level as if the apple had been thrown up; it travels upwards in the sap slowly and ceaselessly from the roots to its final resting-place: the kinetic energy of the rising sap becomes weight potential in the apple.

And the other five per cent. of the apple's substance is also stored energy, but it is generated in the leaves. In these green chemical laboratories certain rays in the light of the sun so operate upon the atmospheric carbonic-acid gas, absorbed by the miracle-working chlorophyl, that the gas is decomposed into oxygen, which is thrown back into the air, and carbon, which is immediately combined with the elements of water and converted into starch and sugar. These chemical compounds, then, represent

potentially the kinetic energy of the sun's light, which energy remains potential, dormant, until the starch and sugar holding it are compelled to issue it again as kinetic active force. This they can do only by being burned—that is, by being combined with oxygen once more, either for the upkeep of the body-heat by an animal or if burned as fuel for fire. Now, no sooner are the sugar and starch made by the chlorophyl than they are carried away in running streams to the eagerly growing fruit ; and the kinetic energy of these rivers with their freights of food is also stored up in the juice of the apple. Thus, the apple's gravity looks less like being created out of nothing than at first sight ; for it is merely the storing up of the sun's actinic power that drags the carbon from the air, and the apple's power of growth that gathers to itself the new materials thus constructed.

But, like so many attempts at the solution of difficult problems, this is only putting another aspect upon our first inference that the apple-tree must have some power of creating energy. We are not one step nearer answering the question as to how this chlorophyl of the leaves uses the sun's energy to extract carbon from the carbonic-acid gas of the atmosphere, nor how the apple grows. To argue that the sun does the work is equivalent to asserting that the wonder of a locomotive is explained by the combustion of the coal, leaving out of consideration the fact that man made that

engine and directs its power to his own uses. The carbonic-acid gas, which the leaves handle so deftly, thanks to the chlorophyl they create for such uses, is so rigid that the chemist cannot break it, not though he collect and intensify the power of the sun's rays ever so skilfully. Still less can he use the power of the sun's rays to combine the carbon separated from the gas with the elements of the water to make starch and sugar. This is effected only by the energy of the plant's life, using and compelling the physical power of the sun to do its work. And each little green cell of vegetable life orders the mighty sun to his and its own proper uses. The sun does work which even he cannot do unless the soul of this microscopic cell compels him. Thus does life control physical forces. And this control is near akin to creation. The naturalist may argue that in the manufacture of its starch and sugar we are dealing with nothing but the storing of the kinetic power of the sun's rays as potential power in the carbo-hydrates, which potential power reappears when these are burned. But by choosing to disregard the energy of life that effects the transformation he fails to annul it ; and he no more answers our questions than when, in asserting that the potential gravity of the apple is no more than the stored-up kinetic energy of the ascending sap, he thinks he has discounted vital power. In such argument he merely refuses to recognise a power because

notwithstanding its might, he has not yet measured it in mathematical terms. And still we must ask, whence the power that stores the apples with potential gravity? Whence the power that stores the sun's potency in the sugar and starch?

Let me insist once more that there can be no creation of physical energy by physical means. It has been experimentally proved again and again in every conceivable manner that no energy is ever annihilated. And certainly in the laboratory the invocation of energy out of nothing has never been accomplished. Nevertheless, we have reason for believing that vital power, whatever this may be, controls and even creates physical force. We know that potential gravity is stored up, and that the apple, as it grew, has gradually accumulated in it the power of the ascending sap. But we have not found physical explanation of the fact that the sap does ascend; we do not trace its rise to any energy that drives it up; unless, indeed, this power be the vitality of the apple, which in creating its own embodiment draws up the sap as a butterfly sucks up honey through its proboscis. The vital power of growth must here be greater than the weight of the sap; and, just as this vital power in the chlorophyl of the leaves is strong enough to decompose carbonic-acid gas, so is the same vital need of the sap a power which will overcome the weight of the sap, draw it up into the apple, and

transform the kinetic energy of the upward flow into potential gravity. By like effort of creative life does the chlorophyl of the leaves compel the sun's rays to its service. And for my part, I do not see how we are to avoid the conclusion that vital force not only has control of but actually creates potential force.*

(iii) It must be clear why it is necessary to understand the relation of kinetic to potential force to inanimate movement

* Lest I be charged with ignorance in not ascribing the ascent of the sap to capillary attraction in conformity with the commoner class-books, which always seek a mechanical explanation of vital phenomena as if to guard against the young mind's love of the marvellous, I hasten to admit that while many physical facts facilitate growth, none of them cause it. Thus, the capillary ascent of sap no doubt helps the apple by carrying the nutriment towards it; but it is the power of the apple's growth that compels its appropriation of the sap. No capillary tube will ever overflow, as every one knows: the attraction between the tube and the fluid being the sole cause of ascent, this attraction actually counteracts any tendency to overflow. Yet the drops of water seen on the margins of leaves in many plants early in the morning prove that the fluids in the vessels of the leaf have a pressure altogether different from that of mere capillary ascent; for they are driven out at the stomata of the leaves through the closed vascular bundles. It has been shown that this pressure at night is positive when the roots actively absorb water from the wet soil; but in the hot day this pressure is negative and the leaves dry and droop. So it is the activity of the growing apple that draws the fluid out of the vessels, thus actually producing in them a minus pressure, to be immediately corrected, however, by ascent from below in obedience to simple physical laws.—*Vide* Dr. S. H. Vines's *Text Book of Botany*, 1902, p. 699.

of the wave and the vital growth of an apple-tree. In each case form is the expression of the power generating it. In the case of the wave, its form and the lifting of whatever weight may lie in its course express to us the fact that the wind blowing on the face of the water is the wave's generating impulse ; in the case of the tree, its form and work express to us the eternal energy of life blowing, as we may say, upon the ocean of formless matter, and creating from it form and fruition. And the argument brings us to a point where two questions of high moment inevitably present themselves.

The first is this : If life differs from the wave and the engine in the fact that its manifestation and work are purposed, does it not stand to reason that life itself has purpose ? Is it not just to conclude that life itself is purpose, and, moreover, intelligent, that is conscious, Purpose ? None of its manifestations as we can study them, not even evolution itself, are other than the just adaptation of its process to a prospective end. Life foresees and desires that which should come, and acts in accord with idea. If there is not consciousness of purpose, as I have already argued, in the individual, then, seeing that purpose is indisputable, there must be consciousness of purpose on the part of the law that compels the individual to its instinctive actions. More briefly, the question is this : What is the absolute purpose of Life itself ? No

it not probable that this soul of power also never dies ?

This question we cannot answer. Yet I take it that many would grant the answer they desire to find as logically necessary but for one difficulty. If, they say, man's soul is eternal, must we not admit also that the life of every beast and bird, every reptile and fish, every insect and monad, every flower, fern, and moss, is also a purposeful soul that, like man's, must be indestructible ? Most certainly this must be so ; and the difficulty in accepting it is not very plain. Yet difference there is unquestionably between man and his humble ancestral cousins ; and one little clue may help us to define the difference.

Every wave is the outward and visible manifestation of the force that gave it life ; and as this wave manifestation disappears when it is shattered on the shore, the form of the wave, we may say, is but returning to the realm of physical energy from whence it proceeded. Similarly, every manifestation of life is manifestation of the Eternal Inspiration. Every ear of corn is a wave moving upon the face of the lifeless waters inspired by the word of God. It is manifestation of God's spirit and will ; it is, in minute yet mighty measure, the life of God incarnate. And when the wheat dies, its service rendered, its duty fulfilled, its power multiplied a thousand-fold in its offspring, then at last its life, like the form of the wave, must return whence it came.

A ripple is a wavelet rising into manifestation by the momentary fall of a stone into the water ; a wave is a form of motion passing through the water, growing stronger as it moves by the constant access of power from the wind. A rose is but form arising into light as a ripple of beauty from a momentary word of the Spirit uplifting the face of the waters. Man is a regnant wave, growing in power from his own willed intaking of ever more of the Spirit's inspiration. Back to the heart of God flies the soul of the rose, when its day is done, to sleep in potential waiting. Back to the heart of God flies the soul of the just man, when the shore of the eternal is won, to open his eye upon Truth.

The life of man is different from the life of the rose and the wheat in this : he has the knowledge of law ; he has understanding, even if he never express it in word or thought, of the warfare between the energy of his life and the ease of his mortality ; he has knowledge of right and wrong. He holds in his hands the eternal power, for right or ill use as he may choose ; he has power of increase in the love of man and God. He may live the life of strenuous individuality in growing dependence upon the Infinite, or he may limit the power of the Eternal. And this last the rose and the wheat cannot do. Man cannot live the life of these ripples of God's word. So long as he works in fulfilment of the power in him for work, he finds what he seeks. But if,

regardless of his obligations, he seek the life of the irresponsible ripple rather than that of the wilfully obedient, growing wave, he will not achieve even the life of the simpler purposes. One thing we know more surely than whether eternal life may be won: that he who claims irresponsibility as privilege incurs penalty of untold weight; a penalty which not only himself but his brothers and sisters must and do daily pay in sorrow and undoing. Even if we doubt the road to life, we can be sure of the road to hell.

(II) THE CONTROL OF STRUCTURE

We must now investigate the control that Life exercises over the structure it erects for its work's needs, in conformity with its assuming of matter and the control of its forces. Life is but a process of seeking and finding, of work and growth. If we are driven to admit at the same time that Life holds in it the possibility of idleness and decay, we are but the more emphatically claiming that it lives only in an effort to fulfil its purpose. This is the destiny of man. Man grows, as every other step in the process of evolution has grown, only through the fulfilment of decrees that transcend immediate need. Though our corporeal structure has, by the time that we reach manhood, acquired the limit of its size and the perfection of its form, yet, so long as the life is in us, we may discern

new possibilities or fruitfulness in the potentialities we have inherited. Few realise the wealth of the inheritance they draw upon, though all they possess in brain power, instinct, and native understanding is but the accumulated experience of a vast ancestry.

To understand this comes near to understanding Life. Though some seem to hold such wisdom instinctively, philosophy nevertheless gives patience and hope to find ever more light in new knowledge. So long as we seek to understand in the light of our birthright that knowledge which is flung before us in such terrible excess of our needs from our babyhood upwards, we are philosophers. The thinker who measures his ignorance by the "clouds of glory" whence he is come, who judges knowledge by his honoured inheritance of intuition, is great indeed. For the finding of the truth is possible only to such as, knowing that truth is to be found, so live the life that the truth shines in them. And these are the meek who inherit.

(A) THE IMPORT OF WAYSIDE FACTS

And now, as an actual step in the inquiry before us, I want to insist upon the philosophic importance of every little fact offered to us, however uninteresting it may casually appear; for it may hold the germ of a revelation. As the apple falls from the tree in virtue of the law of

gravity, so every phenomenon is revelation of ideal law. If it is only through the material facts that we can reach any knowledge of the ideal laws, it is no less true that only through an increasing feeling of majesty in ideal law can we estimate the real value of things. And, I repeat, we may not disregard the deep meaning in little facts of common observation and daily handling, lest in so doing we reject simple and to many of us the only means of understanding. Nor need we fear, because we have not the genius of Newton or Shakespeare, that it is hopeless to see the truth revealed in wayside facts. Facts are no more science, unless we can understand them, than fancies are poetry unless they are true; and one who sees something of the true significance of a single item in biological law may be more truly scientific than another who, in writing a text-book, sees nothing of deep significance in the evidences he has so skilfully, and perhaps devotedly, arrayed. I do not know anything more likely to extinguish an ardent desire to learn than the wet blanket of a students' text-book; and I can conceive of nothing that can better awaken a desire for study than the presentation of the simple wayside facts in their own simple manner of revealing the truths of their nature.

The law of life, let me repeat, is not limited by mathematical equivalents; nor can its changes be predicted with precision. For it moulds and alters its manifestations in fulfilment

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of its changing needs and diverse purposes. Although we can accurately measure the limits of physical forces, we dare not yet aver that we can either gauge or interpret the power of life. The limitations of physical force are known, but the destiny of vital power is beyond the circumscription of its facts.* In other words, function, which is the law's means of attaining its purpose in any particular process of life, is to a large extent independent of the structure specially designed by it for the performance of such function.

This statement seems contrary to personal experience. To assert that we can do without means of doing appears paradoxical ; but to assert that, because we can do, we seek and make means of doing is but common sense. And it is this, simple and obvious though the claim be, that I will show to be a truth of the first importance if we would understand the relation of ourselves to the law that has inspired us to represent it.

Now it is important to realise the difference between function and structure, though it may be

* The discoveries of the Abbot of Brönn, Gregor Mendel, in the early 'fifties, on the laws of heredity throw a wonderful light upon many points that were otherwise obscured. Though these laws are now shown to have a certain definiteness that must be likened to the mathematical, they in no way detract from the accuracy of my claim. Mendel showed how, by rule of thumb, we could predict the results of certain crossing of breeds ; but he said no word upon the individual's power of adaptation to and conquest of environmental tyrannies.

as little possible to separate them practically as it is to sever the abstract from its concrete expression, or the idea from the thing, or the wave from its form. Yet, as we do in our minds constantly and involuntarily distinguish between law and things governed, so can we, and indeed must we, hold distinct in idea function and structure. For instance, seeing is the function of the eyes, memory is the function of the brain ; the eyes and brain are the structures without which neither seeing nor remembering is possible. To go back to the elemental beginnings, matter is not life, and life cannot work or manifest itself without material. Life is function, the function the doing of work ; while matter is the means of life's work and increase. Yet the idea of life is absolutely distinct in our minds from the body it elaborates, though life is only known to us through this body. Similarly, every function we possess is a property of life and dominates the structure it has elaborated for its work. Indeed, structure is fashioned by the need of function, of which truth I shall presently offer sufficient proof. The need of function, the law's purpose, has always preceded the erection of the structure designed for function. The need of seeing has in evolution preceded the development of our eyes, though the individual cannot re-make eyes that are lost.* The converse,

* That certain crustaceans and insects will reproduce a lost limb in perfection is suggestive that the idea and need

as we must at first sight suppose, that we see because we have eyes, is not equally true. From an individual's point of view it is true ; from the point of view of our creative evolution it is not true. The mere giving of an eye to an individual with no mental capacity for seeing, if such a condition is conceivable, could not enable him to see. As we have inherited our eyes, so we have inherited our need for seeing ; but in evolution the need for seeing *better* has ever been the means by which the eye has attained its increasing perfection. And this is the whole of our claim for evolution as distinguished from special creation. Either the need for seeing better has developed an increase of perfection in seeing, or the eye has been given us, independently of any effort in evolving life, that we may learn to use it. All the evidence is against special creation and in favour of evolution. And evolution can only mean increase of need and effort to attain that which is beyond the point of actual possession. Thus it is that the need of function, the idea of increase in work, amplifies or creates the possibilities of attainment in structure.

And so it is with our learning and the materials presented us for such learning. It is only the desire of learning that can make facts into philosophies. It is only the desire for wisdom

of the limb are essential in its reconstruction. But a lost eye is never reproduced in the stalk-eyed crustaceans, though the attempt appears to be made.

that can see the truth shining in the multitudinous glow-worms of the natural world. It is only the possession of a deep purpose in our search for understanding that will discover to us the eternal and abiding Truth. We are all given eyes; yet none can see far without the desire for seeing, without an intuitive knowledge that there must be things beyond our sight worthy of our seeing. Neither our eyes nor the objects they can present to us are of real value without that function which is born of the energy of life's purpose. Hence the man who can use his eyes faithfully in the examination of wayside facts may learn more than the philosopher in his laboratory. To grasp the lesson of one insignificant item in life may teach more than a text-book of physiology in pointing the true relation of form to structure, or function to organ.

For instance, that which biologists call a structureless form of life is capable of fulfilling all the essential requirements of life. The very humblest creature is still such in virtue of the fact that it can perform all those offices which are essential to existence in any and every form of life from a bacillus to a man. Such a humble form of life is found in the *amœba*, and the offices by which we know it to be alive and not dead are three in number: the first is that of eating and drinking, *i.e.*, taking in the outside material and assimilating it for the sake of giving expression to its life, and casting out the effete

matter when done with ; its second office is that of producing offspring exactly similar to itself and its own parent ; and the third is the office of doing certain work for which it is specially fitted. And these offices it performs without any structure whatever beyond such as it temporarily constructs for the performance of its immediate needs. In passing, let me remark that we shall find it hard to eliminate from our minds a conviction that intelligence of no mean order is concerned in the work even of an amœba ; * while we have evidence enough that we cannot deny it the possession of emotions also.

Now structure, in a biological sense, implies the agglomeration of many specially moulded and specially informed cells for the erection of a permanent organ to perform a definite work. The amœba, however, consists but of a single cell, and is therefore held to be structureless. Its functions, for which higher animals build a great complexity of structure, are performed equally well, so far as its need is concerned, without any structure whatever. Its shape is constantly changing as it thrusts forth arms to seize a particle of food. They embrace it and drag it into the interior, where it is digested. Its need of chemically reducing the constituents of the particle to the same composition as its own body enables it, without the structures of stomach or

* Romanes, in his book on *Animal Intelligence*, gives us ample evidence of this.

liver, to produce gastric or other juices that are necessary to digestion. And it thrusts out from any point of its surface the inorganic particles of food that are useless for its work. Sometimes in extending an improvised arm, as if to seize food, it over-reaches itself, so to speak; it breaks off its protrusion, which promptly becomes an independent individual. Its need and desire induce that temporary invention of a structure that shall either advantage itself or increase the sum total of life.*

So far as eating and drinking, digestion and assimilation are concerned, we do not for the moment understand how far we are better off, with all our complexity of structure in teeth and stomach, heart and lungs, than the organless and yet functionally powerful amoeba. Its very mystery of function makes it look more wonderful; for while we of complex organs have our merely animal functions carried on for us automatically

* Certain scientists seek to belittle the function of reproduction by finding that crystals behave like an amoeba in this respect, that as soon as they have attained a certain size beyond which they cannot increase, they begin attaching to their sides minute independent crystals which in their turn grow. Haeckel makes much of this point; while quite recently has been demonstrated the existence of certain fluid crystals which are in constant motion. Out of such facts is found reason to discredit the essential difference between life and inanimate things: a highly curious mode of argument from scientific men! Even the poet, who likens his mistress's eyes to the stars of night, does not reason that because they both shine, they must be of like nature!

and without any sense of their action, it might seem to us that, without an organ to perform a definite function, some understanding of what is required for the attainment of the end in view must be implied in the amœba's digestive work.

If we like, we may say that the amœba does this or that because of some law of Nature that it should do so ; but we cannot remove either the need or the possibility of some understanding. In spite of the fact that many scientists prefer to discount intelligence as a factor concerned in the fulfilment of a law of Nature, we may yet hold that vital law is not natural because intelligence, reason, and purpose are implied in its operations. Indeed, I have yet to be persuaded that any vital phenomenon can stand as such without intelligence being concerned in its very nature, just as I have yet to be persuaded that matter can be manifest as such without its essential attribute, gravity. An ignorant child may think, because a bullet falls to the ground, while the smoke accompanying its projection from the gun flies upwards, that the smoke, although consisting of material particles, has lost its gravity. But it is not so. Similarly, an ignorant biologist, comparing the bullet-weight of his own intellectual purposings with its almost inappreciable, smoke-like equivalent in an amœba, and although he believes in the uniformity of vital law and repudiates the old dogma of special creation, cannot admit that purpose is

an essential attribute in all life. If intellect and purpose are part of man's nature, and are not even germinally part of the amœba's, then was man, we must admit, at some point in his evolution, a special creation. And this the man of science will hardly allow. So that he can hardly avoid admitting, that intelligence and foresight are as essential in life as gravity is in matter. Yet, even if he allow us this claim, he must admit that neither does the amœba possess, nor have its parents ever possessed, intelligence enough for its own or its offspring's creation ; nor for that matter, has the said biologist, even though he spend his life trying to create protoplasm ! And, if both amœba and biologist lack this far-reaching intelligence that is at work in the production of themselves and their offspring, the intelligence is no less there. The intelligence is no other than the law itself which is and ordains all vital phenomena.

And if we admit that intelligence is implied in the digestive work of an amœba, we do so not with any wish to suggest that the amœba is as well equipped without a nervous system as we are with our wonderful brains, but merely to indicate that the Law which has ordered, or is implied in, the adaptation of means to the acquisition of definite ends must have intelligence, must be reason. We have already found an essential difference between the laws of inanimate matter and those by which life rules



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matter and its law, in this: that every manifestation in life has in view, whether conscious of it or not, a definite purpose that shall advantage either the individual, or other individuals, or the law that has need of the life of its creatures. And in this amoeba, as we see purpose even in its humble operations of life, we are compelled to admit, I think, that intelligence is somewhere concerned in its vitality.

Space will not permit more than a few facts to demonstrate the relation of function to structure. To describe all the steps of the transition of a one-celled or structureless animal to a multi-celled or structured, and to trace in the process the advantages gained, would involve technical descriptions and reflections that would turn us from our immediate object. Suffice it to say that all the evidence substantiates the doctrine enunciated by the great John Hunter, a century and a half ago, that "life is the cause and not the consequence of organisation." It would be interesting to give a history of how in the process of evolution the single cell of life, able to subsist independently of all other cells, even for purposes of breeding, in the effort of its life for increase divides itself into duplicate cells and these again into many more, each one of the subdivisions becoming a new individual. But, dissatisfied, as it were, with the small profit accruing to its own person by disuniting itself for the multiplication of its species, it seeks instead, though by

identical process, to multiply the items of its own life. And, with the intent of increasing its own opportunities—or, shall I say, actuated by the Law's intent to do more for the individual, and thus also for the species—it apportions these cell-items, when formed, to various duties, and thus builds structures of varied function. One might so enlarge upon the fact of life's need and desire of increase being the cause of our complexity of structure, that all would marvel at the ignorance of those who proclaim life to be but the flame of a candle, its joy but more perfect combustion, its sorrow but the flicker and smoke of conflicting physical forces. More than this, were time at our disposal, one might find ample evidence that function is not always the prerogative of any particular structure. The lower in the scale of development we look, the more evident it appears that one organ may be vicariously adapted to the performance of entirely different functions; while, when we reach the one-celled, which are therefore one-organelled, all functions are fulfilled vicariously without differentiation of parts.

Yet, notwithstanding the limitations of space, I am going to give a few instances of the fact that function is not circumscribed by the structure designed for its fulfilment; and they shall be taken from highly structured and functioned members of the vegetable kingdom

(b) THE CONTROL OF STRUCTURE IN VEGETABLE LIFE

Biological lore is full of the transformation of structures to serve various purposes; and this adaptability is seen more convincingly perhaps in vegetables than animals. No better example can be found than in the various duties performed by the stipules of leaves, those little winged appendages that are so often seen where the leaf springs from the main stem. They are by no means always present and often appear to serve no particular purpose. In the rose they look like little teeth. In the beech, the lime, the elm, they are represented by the brown scales that protect the young shoots and fall away as soon as the leaves have broken through them. In the edible pea, where most of the leaves change into tendrils wherewith to seize support from stronger neighbours, the stipules become enormously enlarged, so that they are actually more important than the leaves themselves in the plant's economy. In the sweet pea they are not so big because the true leaves are relatively larger. On the other hand in the red-berried bryony the stipules become tendrils to climb into neighbouring hedges. In the common dock and rhubarb they unite by both margins and form a tube that protects the young leaf. In the hop the stipules of opposite leaves unite and split down their centre, thus forming the brown scales that lie between the leaves. Indeed we

cannot by any means always understand the adaptations of structures, especially when the only purpose served is that of symmetry and colour. But for that matter it has yet to be shown that beauty is not a function in developmental needs, and that mutual service between species, if only in awakening the emotions of delight and wonder in Man, is not a large factor in the evolution, at any rate, of his species. Be this as it may, these stipules show at least the varied functions assumed by morphologically identical structures.

In speaking of Nature and Remedy, I have already described the curious habits of a not very common plant, the subterranean trefoil. I can recall no better example than this of the adaptation of structures originally designed for one purpose to another quite foreign to them. To recapitulate the points ; we may suppose a head of white clover florets once upon a time to have found the soil too poor, or its own roots too debilitated, to secure enough nutriment for all their seeds, and that therefore the central florets relinquished their function of reproduction, leaving only three or five of their number to conform with the original intention. The head of florets on its elongated stalk then bends downwards to the soil, and, by a series of extraordinary changes, buries the few fertile pods ; while the more numerous infertile florets, arrested in their original development, change into roots and thus secure better nutriment for their more fortunate

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sisters' offspring. They relinquish their right privilege in the need of service.*

I am well aware that most biologists would affirm that this instance of the plasticity of structure is better explained on the theory of survival. The soil being too poor, they will say, to supply nitrogen to many seeds, the attempt to produce more than a few fertile flowers is abandoned. But accidentally, *i.e.*, with no purpose in view and uncontrolled by any law, the peduncle continues to grow, while the weight of the flower-head bends it down so that it buries its ripening pods. The calyces, now finding and absorbing moisture, swell and necessarily expand, thus throwing up the soil about the fertile pods above them. Any part of a plant, if thus buried, would perhaps absorb water and the nitrates held in solution; and thus any part might become a root and contribute to the general nutrition of the plant. Then the theory of accident would stand thus: that an individual, having accidentally discovered some new mode of living which proved highly beneficial to itself, was thereby better fitted for survival than others; and then transmitted to its offspring the instinct to do likewise—but an instinct now no longer to be explained by accident, because inherited in virtue of a dis-

* For other instances of this renunciation of privilege in the service of the commonweal, *vide* the author's *Religious Sense in its Scientific Aspect*. Second edition, 1903.

covered advantage. All this we may be ready to grant if allowed to carry the theory further. It is doubtful if ever an accidental variation is transmitted unless wedded to a definite advantage.* If the burying of the pods by the parent plant is thereafter perpetuated because of the advantage, then, even if the plant owes its initial gain to accident, either the plant or its ruling law must have intelligence to profit by such accident and so to arrange the species' future that the burying of the seeds shall be thereafter purposed. In either case, whether this strange trefoil discovered by accident a new method of nourishing its seeds, or whether its need of better food made it seek new means of finding it, we must admit that it adapts its flowers to perform the function of roots. Even if we attribute all variation to sex-crossings, that does not alter the fact that, new conditions of life developing from accidental admixture of potentialities in this trefoil, it managed to live in spite of them. It was indeed a wise if crippled trefoil that, accidentally discovering a means of circumventing its

* This is a point much debated by the authorities. While no new variation or mutation can become a characteristic unless affording a better chance of survival, it must be admitted that multitudinous specific characteristics are persistently handed onwards without their superiority or even utility being obvious. This, however, does not deny their utility. It is certain, on the other hand, that, when organs cease to be used, they atrophy and are then transmitted only as useless representations of former serviceableness.

new fangled misfortunes, patented the happier plan and bequeathed it in perpetuity to the heirs of its body !

The compiler of text-books will repudiate our right to cast the glamour of romance, as he will say, over the bare facts of biology. Yet if he is justified, he knows more of nature than I do, or he is content in knowing much less. Do not the workers of the hive serve their queen ? Do not the drones meekly submit to extermination as soon as the best among them have been selected for the purpose of fertilising the queen ? Look where we will, we shall find that this service of the neighbour, this relinquishment of personal advantage that the offspring shall thrive, are most wonderful among natural facts. And to state these facts in terms that recall the moral attributes of human life in no sense must be called romance ; for such terms imply but a perception that the same ethical laws pervade all life, and that they are not essentially different, though they be obligatory upon the lower animals and vegetables, optional in large measure in Man.

In passing I would most earnestly warn the earnest student against the disparagement he will meet when he finds glimmerings of eternal truth and the dawn-light of beauty's significance in the wayside facts of the oft-trodden road. If he discover ethical law in Nature, duty in beasts and flowers, love in birds and insects, he will most

assuredly be accused of acquiescing in a system of anthropomorphism. But why should we not understand other forms of life through the understanding of our own? If evolution means anything, it means that all life is the same power in varied degree of perfection throughout creation : not even man can possess any attribute whatsoever but it was present in minute manifestation and germinal possibility in every individual contributing to his genealogy and prospective enlargement. If we are not anthropomorphic in our studies of Nature, we are not scientific. Suppose a schoolroom of child-angels eager for information concerning the ways and customs and scientific evolution of the strange species of vertebrates called *homo*. Can we suppose they would be satisfied if their master contented himself with such teaching concerning the human race as a terrestrial school text-book of history can unfold? Can we think that, if one of these pupils stood up and asked whether there could not be found some elements of love, some sense of truth, beauty, justice, even among those early beginnings of the divine life, he would be satisfied with being told that science was the knowledge of facts and the laws of facts, as summed up in the history-book, and that a theory implying that romance took some part in the life of those wretched shedders of blood, those heel-ground mortals, was but a form of sentimental *angelomorphism*? Would not

such a scholar sit down again with troubled heart and ruffled feather, and hope that he, notwithstanding his technical ignorance, knew more than his master? Would he not, as he grew older, suspect, with a steady-growing hope, and ultimately with a scientific conviction, that the laws of the Life that lives in work, and work that lives for the increase of Life, is essential in the angel cosmogony, must be in operation, despite their seeming obscurity in the terrestrial life? And this notwithstanding the text-books' ignorance.

The laws of life are indeed inseparable from its energy. They are, on the one hand, those of purpose, of truth, of the proclaiming power of beauty, of service, of work; or, on the other hand, of degeneration, of parasitism, of self-seeking, of idolatry, of gross horror and shame. The laws of life in their multifold manifestation and changes of degree are the same laws in man, in the angel-host, if such there be, and in all the lowly things of life wheresoever we find them. And this must be the true clue to the understanding of life and evolution.

Yet why the law of service is absolutely compulsory in bee and trefoil, inflicting no conscious hardship upon them, and yet with man a matter of strife after something higher than lies consciously in his personal nature, must ever be matter of conjecture. Perhaps it may be that man's

possibility of function is ever greater than the apparent possibilities of his structure. Is it that his nature "smacks of something nobler than herself;" that man is not comprised in the structure which the law of life has erected in his mother's womb; that there is ever more for him to do than his own necessities demand of him; that there lie undreamed possibilities dormant within him that shall ultimately rule his mere bodily structure into a veritable transfiguration?

Even this subterranean trefoil has in it possibilities greater than could be measured by a structure which had failed to fulfil the bare needs for which it was originally designed. Yet the plant is still full of the energy of its life; it is still, in spite of its structural failure and its sexless offspring, strong in determination to fulfil its nature. It teaches the crippled children of its house to serve in wonderful versatility of function and in victory over its feeble structure. And indeed, man is but a makeshift if he be limited by the bare permissions of his structure. If he see only "with not through the eyes"; if he hear no music but through his ears; if he find no truths in the wayside facts of life, but takes as truth the grave-stone information that stares from his text-book; if he be thus limited by his structure he is something less than man, or at best much crippled. But I am here anticipating.

There is, beside the subterranean trefoil, many

another plant whose roots, finding insufficient nutriment for their seed, are compelled to secure nitrogen by adapting to such service structures originally planned for other duties.

(c) One of the most striking differences between animals and vegetables is that the former feed, with the exception of the oxygen they breathe and the water they obtain, entirely upon organic material, either, upon animal or vegetable food. And at first one should be inclined to think that any living being that lived upon flesh must be an animal. But there are plants that literally eat, digest, and assimilate the flesh of insects. This function, though foreign to the general habits of the vegetable kingdom, has been developed in such plants as, from their growing in certain moist or boggy places, are unable to extract from the soil sufficient food to make them fertile. Plants, as complex beings, need organs for every function they perform; and these carnivorous plants are compelled to adapt some of their existing structures to hitherto inexperienced needs. It is for the most part the leaves that assume this new function. Designed originally for absorbing the carbon and liberating the oxygen from the carbonic acid gas of the atmosphere, the leaves have learned to do entirely different work for the assimilation of flesh. Moreover, the plants so adapt and force new functions upon their leaves, that is, so compel them to do new work with purpose in view, that the leaves

become traps to catch, or arms to embrace and hold, the unlucky insects that fall, or crawl, or are enticed into their clutches. Best known among such are the Sundew, the Venus's flytrap, and the Aldrovanda, which all belong to the order Droseraceæ, yet which, though in their inflorescence so like one another, have adopted different modes in each case of consuming flesh. Of these plants I will not write further, though it will be worth while to give particulars of two or three insectivorous plants belonging to the natural order Lentibulariaceæ. This order has many points in common with the Scrofulariaceæ, which comprises such plants as the digitalis, antirrhinum, etc., but all the Lentibulariaceæ eat flesh, and, like the Droseraceæ, erect quite different structures in different members of the family for catching and digesting insects.

The bladder-wort (*utricularia*) is a water-plant, and its leaves, like most leaves under water, are split up into root-like divisions. At certain indefinite points upon these leaves are developed little transparent bladders. Casually observed, these bladders, with their humped back and bristles round the mouth-like orifice, look for all the world like some of the minute crustaceans which, we know not by what means of force or guile, creep with other live things, such as the larvæ of gnats and animalcules, beneath the trap-door that closes the orifice, and are hopelessly imprisoned. We have had very wonderful

accounts given us of an apparent hesitation and even fear evinced by one little animal (Cypris) before yielding to his desire or compulsion to enter the fatal larder. Once inside, the captives die of suffocation, and, after decomposition, their juices are absorbed by specially designed hair-glands. Unlike the leaves of the butter-wort, these bladders do not digest their food by the secretion of a gastric juice. They simply wait till their prey becomes fluid from decomposition, and then absorb the juices. Thus we may say the bladder-worts live upon carrion.

The butter-wort, *Pinguicula*, so called from the thick and seemingly greasy leaves that stand immediately above the wet soil and surround the tall flowers, also devour flesh. The leaves perform the offices of both trap and stomach, and they actually secrete a gastric juice to digest their food. But instead of producing permanent traps like the bladder-wort's, the spoon-like leaves of the butter-wort slowly curl over and enclose any insects that have stuck to their glutinous edges; and they push others towards the centre where the digestive juice flows more freely. By this cupping and incurving of the leaf the juice is prevented from running away. I suppose we must accord the butter-wort a functionally higher place than the bladder-wort. If both are beasts of prey, the one is a sportsman and the other but a jackal: if one must go a-hunting for flesh, it is decenter to eat as he kills than to leave

his prey to die slowly in his traps and decompose before he considers them worthy of digestive consideration ! Be this as it may, one fact is highly significant, that, although these two genera, the bladder-wort and butter-wort, hold in common such reproductive characteristics as bring them together under the same natural order, they possess also a function in common, foreign for the most part to the nature of plants, of trapping and consuming flesh. This function, not showing itself in a definite or constant structure, is not classed among the essential characteristics of the order, these being found in the structure of the flowers ; and yet we must hold that it is a characteristic, though manifesting itself in utterly different method in the two plants. To repeat : this natural order has a remarkable function, absent, with few exceptions, from all other plants ; which function, supplanting the duty of roots, of which all insectivorous plants have but few, or counter-acting the disadvantages of poor soil, has led to the erection of a totally different structure in the two otherwise closely allied genera. As far as the carnivorous propensity is concerned, it is the function that forms the characteristic and not the actual structure.

And we see once more how function and need of function dominate structure. In other words, we see how the need of a special form of work becomes concrete in diverse manner. We see how

idea or need rules structure, and that it is not primarily upon the possession of structure that work depends. Without the means of working, without, that is, his structures, even Man can do nothing ; yet, without the desire or need in him for work, his structures had never been erected for him by the Law that has ordered the evolution of himself in the ever-growing energy of life.

Other designs adopted by insectivorous plants for securing their ends are quite as astonishing. For instance, there is another species of bladder-wort, the *utricularia montana*, growing in South America, and frequenting, as Darwin assumes, rocky places and burrowing with its rhizomes into crevices. These rhizomes, which are stems growing beneath the soil, bear large numbers of bladders with valves and antennæ for the trapping of insects, etc. And, although the plant grows in dry places, these bladders are full of water and bubbles of air. To keep up the supply of water, the plant has developed also upon the rhizomes tubers, like potatoes, but containing in their microscopic cells only water and no starch or other nutrient substance. Though all tubers and bulbs contain much water, Darwin tells us that he knows of no other instance, except one or two other allied species of bladder-wort, where tubers are produced solely for the storage of water. So here again these bladder-worts are ordering their structure differently from other plants for the sole purpose of performing their peculiar

and almost, we might say, unnatural function of flesh-eating. And in this *utricularia montana* with its reservoirs of water, and the bladders, almost identical with those of the species growing in water, are developed from the rhizome-stems and not from the leaves, which are not subdivided like those growing in water, and bear no bladders. The bladders, indeed, could not possibly exist on the aerial leaves, partly because they would not be visited by the insects they are set to catch, and partly because they would shrivel in the sun. So here once more we see function ruling structure.*

Let me summarise the points that immediately interest us concerning the butter-worts and the bladder-worts. They all belong to the same natural order, and closely resemble one another in their flowers, which are the essential characteristics of plants. None have sufficient means of gaining enough nitrogen for their seeds, either because of the poverty of the soil or of their lack of roots ; so they have all developed the faculty of catching and feeding upon insects or other small animals. This function has resulted in the elaboration of different structures by different members of the family, such as the thick curling leaves of the butter-wort, and the fatal ladders hung from the finely subdivided leaves of the bladder-wort. But while the same function produces such diverse structures in different genera

* For fuller account see Darwin's *Insectivorous Plants*.

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of the order, it is the leaves that form the foundation for all, even in the *utricularia montana*, the rhizomes of which, though originally stems, bear no other leaves. Altogether these plants show an extraordinary indifference to common usage ; they point most forcibly the fact that it is function which ordains structure.

It is an absurd saying that "exceptions prove the rule." It is nevertheless true that exceptions, by directing our attention more closely to conditions that, but for the exceptions, were so ordinary or matter-of-course that they would pass unnoticed, do set us inquiring into the completeness of the rules. The exceptions to the lesser point a greater law ; they indicate often a larger, more widely embracing law than we had otherwise discovered. If these insectivorous plants form exceptions in many respects to the almost universal rule of plants, they point a law which is full of the profoundest significance in all life. Moreover, while they show how function and purpose control structure, they suggest that this great law of life may be in operation even with Man, although in a manner we may not at once understand.

(c) THE RELATION OF MAN TO HIS STRUCTURE

In relation to the possibility in man of control over his organisation two questions inevitably present themselves. The first is this.

If a low form of life, such as an amoeba, performs all the essential functions of life without organs or structures, except in so far as it creates its own means for every immediate and temporary need, how comes it that Man needs such a mighty complication of special structures for the conduct of his life? And the second question follows as corollary to the first. If life rules structure and has actually erected it for the elaboration of its behests, how comes it that, the higher we ascend in the scale of evolution, the more dependent we appear to grow upon the structure that our vital energy has made? Notwithstanding our boast of excellence, we men have our material and its organisation less under control than the amoeba; and we must admit that, having no physiological function to perform but what is done for us by our various organs, we are more definitely automatic machines than an amoeba. If the access of air to our windpipe is cut off, we die in a few seconds; whereas the amoeba breathes with its whole surface, and, when grown too big to get air enough on its outside, it swallows a passing bubble and makes a lung for its temporary need just as it made a stomach. Or, again, so feeble does Man's vitality appear to be, and so dependent has he become upon the various organs and limbs that minister to his needs, that, if he loses a leg, not only is that limb of no further use to the energy which designed it, but its owner goes crippled thereafter, or goes not at all.

On the other hand, our amœba, if deprived of a portion of its surface, is quite independent of its loss, and rapidly reproduces what is wanting. And not only this, for the portion detached is still retained by the vital power governing amœbas in general, and it immediately becomes an individual on its own responsibility. Truly it looks as if we men were mighty poor creatures ! Why, not only can we not get about without our legs, but, forsooth, we must have eyes to see where we are going, and ears to hear what is coming behind us ! The amœba has sense, of course, in rudimentary measure ; but it is one sense, comprising all its needs of seeing, hearing, and touching, on the general surface of its body. And what wise amœba could desire more ? Deprive man of his eyes, and his ears will not suffice him. Man is so easily broken ; while an amœba has no understanding of what it means to be handicapped in life, and possibly, as Weismann argues, it lives for ever. In what manner, therefore, we again ask, profits us our great complication of structure and elaboration of function ?

I am sure the amœba, if it could analyse its rudimentary intelligence and draw the logical conclusions of its contemplations concerning man's structural privileges, would be puzzled whether to regard him as a voluptuary or an ascetic. For it would claim that the sole advantages in structure lay in the automatic performance of the simple duties of life in order that the in-

dividual should be spared the trouble and responsibility attached to labour. It would, if it understood how structure is built of individual cells like itself, each with its own vitality and office, but chained to its special duty, claim that Man has enslaved myriad beings to work for him that he might be freer. It would draw the conclusion that the possession of a structured body was neither more nor less than a pandering to luxurious instincts. Like ardent reformers among ourselves, it would plead for an elemental simplicity in life, and implore Man to renounce his comfortable organs. And it would pat itself on its temporarily erected back with an arm momentarily invented for the purpose, and declare its intention of still devoting its whole life to the work immediately demanded of it, namely, to the ingestion, digestion, and assimilation of the edible environment.

At another moment the amœba might marvel at the manner in which some men at least go through life with little thought for those matters which an amœba thinks are sufficient reason for existence. It would wonder where their pleasure in life came from, and why, indeed, they should trouble to live: for life, it would say, is nothing without eating, and pointless without a ceaseless desire to hunt down tasty morsels. And, whether posing as ascetic or epicure, the amœba would perhaps feel glad that it was not man.

Or, again, even among highly-structured and

organ-served animals, how shows itself, this boasted exaltation of life possessed by Man, when he has so little control over his structures that he can never reproduce even an amputated limb? A crab or lobster, animals, in all but their brain, nearly as complicated as Man himself, will voluntarily detach a claw if held by it, or even if fearful of being captured; and, as soon as it is free, will begin growing another claw that will ultimately be perfect in every respect. The crab holds such control over its structure that it can reproduce in its matured person the embryonic processes by which it had sprung from the formless, structureless ovum. We may truly say, seeing that every embryo in its development, whether *in ovo* or *in utero*, traverses in the brief space of its incubation or gestation the whole process of the evolution of its species from the primordial germ to its parent's attainment; and although this process had originally occupied an æon of time for its operations; that the crab, on losing a limb, immediately turns back its clock a few million years, and sets about in its own old body the reoperation of its lost limb's evolution. Truly, we must admit that in this sense the crustacean has more power over structure than has either man or monkey.

There is, of course, an easy answer to the amoeba's claim of superiority to the crab and to the crab's claim of a greater power than Man's. Yet it is an answer that puts us in a most extra-

ordinary position in relation to the world we live in, the power that lives in us, the infinite life on whose bosom we lie, and the mighty fact of our submission, on the one hand, to the rigid law of our structural being, and, on the other, to our need of transcending our servitude. The answer is that *man lives less than any animal in his body and more than any in his environment*. To appreciate the significance of this statement we must realise what is meant by environment in a philosophic sense.

Environment is the material world outside the individual and everywhere surrounding him. The energy of life manifests itself in compelling the material surroundings to its service. It is life's privilege to conquer, and thus proclaim its power. The growth of the Low Countries gives apt illustration of what we mean by environment. Steadily have their vital forces won domain from the all-swallowing sea. And to hold what they have won needs ceaseless labour and untiring effort in watching, lest they be swamped once more and extinguished. And so it is with life : without ceaseless energy, the environment would encroach upon the domain won from its kingdom, and the unwatchful spark of life's energy would be finally swamped.

For a moment let us go back to the wind moving on the face of the waters. The wave arises and passes through the face of the ocean, taking into its embrace successive portions of the water,

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and thus manifests the power that rules. If we can conceive of form abstracted from matter, we may say that the form takes possession of the fluid with which it comes in contact and embodies it; and that thus it represents or expresses itself in the structure of the wave it erects. Now the fluid with which the power of the wind comes in contact is the environment. It is the contest of the wind's energy with this environment that leads to the conquest of the environment and its absorption into the structure of the wave.

So important is it that we should grasp this relation of idea to the material which manifests it, and of life to its environment, that yet another illustration will be pardoned. And this illustration will still further point the essential distinction between the forms of physical forces and the forms of vital energy.

The building of crystals is a most beautiful development of form-power. A super-saturated solution of saltpetre appears at first sight to be an inert, powerless fluid. But it contains sleeping in it a wonderful power of form. We have but to awaken this potential, sleeping force, by touching it with a needle, for the force to arise from its slumber and be manifest as kinetic energy: crystallisation immediately begins around the point of the needle. The power of form, called into life by the touch, as it were, of a fairy's wand, seizes upon the environmental possibilities. It calls to and awakens

the idea of form in all the neighbouring molecules whose identity had been dissolved and hidden in the water. They each and all obey, lift up their heads, and fall into rank, producing the crystalline form of a six-sided prism. This steadily grows as long as there remain any molecules of salt-petre, and the water, by its evaporation, can yield them. The point from which crystallisation started has controlled ever more and more of its environment and has compelled all neighbouring molecules like itself to serve the law of the form. The dry land of crystalline form has been reclaimed from the water by the power of the crystal's ideal force.

This at first sight looks strangely like the structured animal's growth. But, whereas the awakened form of one crystalline molecule of salt compels its neighbour to fall in with its idea of accretion in the extension of its bulk, the initial solitary germ of man, after the wonderful vitalising that begins with a wand-touch of awakening, breaks itself up into a number of co-operating cells. These again change and multiply into myriads more, some to make bones, some skin, some brain, and some stomach ; while the form, the awakening idea of the man to be made, controlling all, compels each to absorb into its own person such food, such portions of the environment, as are necessary for its growth and work. The initial point of a crystal's inception leads but to its growth in manner and force equal

and identical with the force of the first crystalline point. The inceptive power of man's making consists not in a mere agglutination of lifeless particles, however truly these might be impelled by the idea of the form, but in the actual creation from its own inceptive life of more particles of life that shall obey and serve by conquering the material environment and using it as food. The crystal grows in bulk. Man grows in power. The force of the crystal's form remains the same throughout. The energy of Life, that ever blows upon the surface of the environmental water, is one of steady increase of purpose and augmentation in freedom to control the environment. But whether we look at the birth of the wave, the growth of a crystal, or the life of a man, in each case we are regarding the power of form over the environment it embraces to express itself.

And now, in offering the clue to my remaining argument, I must enlarge a little upon the points of our superiority over amoeba and crustacean, so that we may be prepared for some wider ideas. Practically, we do not doubt our pre-eminence over the amoeba, with its perfect independence of structure, or over the crab, with its power of casting off its powerful claws and its ability to re-create, as matter of constant habit, its lost limbs. Yet to ask ourselves in what our advantage consists gives room for reflection. Man's body is a structure built of

material wrested from his environment. And the body is the immediate environment of the soul, which uses it for the sake of expressing existence and of doing work. And just as the Low Countries do not look upon that territory they have won from the ocean as their environment, which is rather represented by the ocean itself, so we do not ordinarily look upon our structure as our environment so much as our very self. Yet if the energy of life that controls the dyke-girt land which it won from the sea dwindles and grows slothful, the sea will again take back its own; and what the life once had won it must win again. As soon as the life departs, the body is seized upon once more by the disruptive force of the environmental matter. And throughout our life we are striving not only to win our needs from the infinite environmental sea through which our wave-form passes, but no less we strive with that part of the environment which temporarily stands as our personal structure. Thus our very bodies are but part of our environment. Moreover, the corollary of this conclusion is that the very environment outside ourselves becomes part of our structure, for in it we live more truly than in our bodies. How little man's life can be without its outside world! What profits all his perfection of structure without the environment in which he lives? His environment is not only a means of feeding, but his very reason for and means of existence. After all, it is not meat and

drink that make life good, but the love for our fellow, which we add to and take again, the knowledge and understanding of things, the hope in the law's fulfilment, the strenuous energy of own responsibility in purpose. These are no less environment than they are ideal; they do not the less come from environment though they are non-environmental to the self-contained amœba and to the satisfying man. We, being still ethical creatures, as we were of old before "disordered sin jarred upon nature's chime," even now being born in sin and children of it, live the true life only in the winning of ideal worth. The environment in which we live is not the less part of ourselves that the best it offers is ideal; it is not the less truly the body in whose ministrations we grow. And as the body, with which our parents have equipped us, lives upon food and drink as well as in the strength of the eternal Idea, so our environment in which we grow is both material and eternal. Money, houses, and lands; clothes, jewels, and gimcracks; churches, libraries, and laboratories—make our environment, some say more surely, some think less, than the truth of love, than the wisdom of service, than the beauty of things. And it is man's high privilege to choose what he will reclaim from the sea of his environment—that which rusts or that which does not decay.

Are they not answered, the amœba's and

crab's stupid apology and claim of advantage? Our body in the larger sense, be we amœba, crab, or man, is the measure of our possibilities in existence. Man's body is co-equal with his environment, and his power is not gauged by facilities for taking in food at any point of his surface or for re-growing an amputated limb.

The advantages of our great elaboration of structure are two-fold.

The first is the setting aside of structures that shall automatically do the work for which the whole personal energy of the animal would be otherwise needed, thus liberating that personal energy for other work; for the enlargement of purpose is first among our birthrights. So that the automatism with which the amœba twits us should be our claim of superiority. It may, possibly, understand its digestion, because it devotes its whole soul to the process, while we are absolutely unconscious of the machinery within us. The environment in which the amœba lives is embraced by its stomach-sense. But our environment we may choose; and, as we please, we may fill our stomachs with luxuries and our safes with securities, or our hearts with the love of God and our hands with the service of man. Man's body is, notwithstanding his limitations and automatism, the measure of his possibilities in the infinite, the means of claiming his inheritance from God. Man's life has broken the fleshy bonds.

And the second advantage is the increased means of controlling and winning environment, so that we can live largely in freedom, notwithstanding our corporeal servitude.

Indeed we are at last enabled truly to profit by that awful law : the fit alone shall survive. For we abrogate its tyranny over our souls. By the use of physical forces, by enslaving or exterminating other species, by selection of the fit against the meek, we are told, and must believe, that evolution has been accomplished along with it too has steadily been manifest in lowly things, triumphantly in the saints, that other law of increase : where true gain is found in giving, true growth in self-denying, true freedom in the knowledge that life has now done with self-service. For the right man lives no longer in his body but in the hearts of his fellow-men ; and his joy will be found in the inspiration of the Spirit.

(III) THE CONTROL OF ENVIRONMENT

It is clear, then, that Man's excellence in structure brings lessened control over that structure, and it is no less obvious that his privileges in the social law he has created bring environmental restrictions. His many possessions and defences, acquired in large measure to protect his nakedness, become hindrances. The knight's armour offers security, but is a woeful restraint. If we are, as

our evolution advances, increasing our freedom, our very freedom is bound in chains. And this is true both socially and physiologically. Our increase of power through the attainment of the body's betterment; our ceasing to be *amœba* that we may become man; our building of structure that shall automatically set us free to take within our lives the outside world—these attainments, we must fearlessly admit, all chain us to restrictions. The very effort to make ourselves again independent of our bodies and more reliant upon the power within us has, although we do in some small measure succeed in such effort, unearthed chains out of that environment in which we toil for freedom. For instance, we ceased long ages ago to grow fur to keep warm our bodies; and we now use sheep's wool, grown in excess of their needs, and flax and cotton, to weave garments of protection. We have liberated some power in us that was formerly needed to erect structures against cold, and we are thereby freer to subdue and appropriate our environment. But while we have grown less dependent upon our own structure for warmth, we have grown more dependent upon the environment; release from one prison has chained us in the other we had sought for its offer of enlargement. And the crab who constantly casts and re-grows a larger shell as he increases in size, and thus is independent both of the limitations of his structure and the service of his environment,

might well claim superiority. Nevertheless, man's environment is his inheritance, and its control is his privilege. His environment, being illimitable, gives possibility of indefinite increase, while, great though the crab's control of its structure may be, its higher education is restricted to custom as rigid as its shell.

But let us recognise to the full what we have lost in acquiring an automatism that has set us free for other work than minding our machinery. So many are the safeguards we have set about us in the utilisation of our environment, that civilised man, considered from the standpoint merely of his structure, has doubtless become inferior to the aboriginal. We cannot see nor hear as far as the Maori ; and, from the point of view of personal independence and perfection in manly structure, the aboriginal chief may be superior to an Anglo-Saxon statesman. But if we grant this, we shall also be driven to admit that the aboriginal is inferior to the ourang-outang in physical strength and independence of clothing, in capacity for living on fruits, in contentment with its social conditions, in freedom to roam where it will. Man is inferior to the eagle in strength of eye, to the horse in fleetness of foot, to the lion in courage. And there are senses in all probability which, in Man's thirst for advance, he has left behind him for ever.

Nevertheless, the aboriginal man is greater

than the ourang-outang, and this because of the larger possibilities dormant within him. And civilised man, despite the limitations that freedom has imposed upon him, not only in social restrictions but in the slavery of luxury, is even greater, because of the near possibility of a wider freedom.

But let us compare further our case with that of an aboriginal people. Granted that Man has parted with so many points of superiority as gate-money to the arena of his widened environment, we are still compelled to admit that the further he roams and the less he submits to the restrictions of that railed-off part of the arena for which he has paid, the more definitely a comparison between this twentieth-century culture and that of countless years ago disparages ourselves. This aboriginal civilisation, still obtaining among the Veddas of Ceylon and the Mincopie of the Andamans, is not without some points of advantage. The Veddas, though they cannot count above ten and cannot laugh, do with their hands and their five senses what our mathematicians and poets cannot do, not though so simple a thing as the use of the bow were necessary to save them from starvation. The food supply of these men of high culture is, so far as their foraging and culinary efforts are concerned, automatically provided for them. If they had to dig for roots and till the rice-patch, catch lizards or rob the bees, dig caves or build huts in trees, our men of culture would ill compare with their bronze-

skinned brethren. And as the amoeba stands out for its superiority over a structured animal, with a complex environmental body to which it is enslaved, so the aboriginal will plead his superiority because each man can do his own work independently of the complex machinery of social or state administration. As the crab, because he can control structure and re-create a cast shell or limb, also claims a truer familiarity with the essential energies of life than is possessed by the vertebrate animal, so may our aboriginal taunt the sage professor with his inability to rebuild his house if burned down or blown away by the wind.

In the simple restrictions of his social laws, the Vedda might also claim superiority. He scarcely knows either theft, bloodshed, or domestic infidelity. If a man steals, the sole penalty inflicted by the community is restitution ; if a wife is unfaithful she is taken home and forgiven, though her seducer is flogged. The Vedda, being inspired with no passion for progress and no desire for conquest of the environment beyond his material needs, may hold himself to be happier, as indeed he is from the point of view of his limitations, than those who subdue environmental opposition in the mere desire for progress. He has apparently no religion beyond a fear of evil spirits. He has no great energy within pushing him onwards, and there are no obstacles forbidding his advance. His days are environed by peace. And so, indeed, are the days of the

lap-dog and canary. If we extol the material blessedness and moral excellence of the Vedda, we must admit the completer advantages in the lives of the placid cow, the ingenious lobster, and most of all of that almost non-existent being, the *amœba*. The whole question is thus summed up: Is life desirable or is it a curse?

The value of life will be estimated according to what each man seeks and finds in his environment. Some find stones and weeds, and so seek them; to such life is stony and weedy. Some find jewels and fine raiment, and so work to win them; to such life seems good, if only they have means of buying what is lifeless. Some find life all a-glow with beauty and delight, and so seek it; and having found that its beauty can be no other than the manifestations of its essential worth, they so labour that their friends and neighbours go forth with themselves to find and to seek; to plant new life in place of straggling weeds; to put jewels and money into their right places, which are not the hearts of men. And these, that labour in the strength of their hope, and hope in spite of the grim insistence of despair, are by the common consent of present and past ages judged mighty among the people. Despite their sadness and frequent failure; despite their lack of common sense in the strife with necessity, and their disregard of their pocket's poverty; despite their tears, indeed, and the mockery of

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men, these are they who know that life is good if men would but live it.

Man's life is measured by his environment. The great difference between his life and the amoeba's is its limitations to its body's confines, as contrasted with the extent of environment in which Man lives. And another difference is this: that whereas the lower animals are driven into their environment in obedience to the claims of their hunger, men may choose between their own hunger and the needs of their neighbours. If he would be more than amoeba, Man cannot but bless the ordering of his evolution, notwithstanding the misery he has wrought in the world through his right to choose. Yet misery is not the fault of freedom, but the fault of Man not being free.

Because Man's life is so truly his environment, I invite a closer examination of its privileges, and shall venture to press the analogy and contrast between him and the amoeba. The amoeba is independent of organs and structure, but is nevertheless so strong in any particular purpose it may have in view, that it is able to erect a temporary structure to serve such purpose, and to abandon such structure as soon as its function is accomplished. But as the life of the amoeba is measured by its body and the control of its body, so no less surely is Man measured by his body and the control of it. But Man's body is comprised chiefly in his environment. His flesh is

but the automatic machine with which he moves about in his possessions. And he can move therein as freely whether he be learned in the body's construction or ignorant, whether he have sense of the law which has designed and still impels it or be totally ignorant of physiology and metaphysics. We are greater than the *amœba*, not so much by the size and complexity of the environmental body in which we move as by our control of this body. The *amœba* may boast an unending life; yet in quality and power of controlling his body Man's life is infinite as compared with the *amœba*'s. When, moreover, he considers his mastery of his environment, he may well ignore the limitations imposed by fleshly structures. Yet the greater environmental body is as definitely, though not quite as rigidly, structured as is that of the flesh; and the inexorable control it wields over our life must appear at first sight almost as hopeless as the structure with which "wall upon wall the gross flesh hems us in." Nevertheless, and notwithstanding this environmental tyranny, expansion is illimitable; for Man's freedom will ever be found in the widening domains that, in spite of all his chains, he can win and rule. This environmental physiology, so to speak, is found in the laws of state and society, without which anarchy would prevail as truly as it would in our flesh if we contested the laws of its functions. Yet there is this great difference: the construction of the environmental



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body's laws lies in Man's own hands. So that, bound though he be by social law, he still has some power to modify its structures ; and the good citizen uses it. Even when his hands are most tied, he is still freer to control his environment than is even the amoeba to govern its versatile body. For we may, where we will, throw out an improvised arm to give love and service where they are needed, and to take into our soul that increase of life brought us by love and service rendered.

There is so much import in this environmental body, so essential a part of Man's organisation, that it deserves further analysis. I have referred to his environment as comprising his possessions. And this is more truly the case than at first is apparent. The flesh, with all its ministrations and restrictions, appears to many as the whole of their possessions in the natural state. And it is still our possession, though it would appear truer, considering our slavery to its laws and demands, and strange mechanical impellings, to speak of it as possessing us. Both aspects are true, for the slave possesses his master as truly as the master possesses his slave. And so it is with the environment. It is not the less our possession that we may either possess it or be possessed by it, or that both are in a measure true. It is in the latter sense that we must regard it, if we would understand it : but with this qualification, that we may choose either to obey merely because

the social law claims obedience, or to take share in the works of the eternal Law by compelling the environment to fulfil something of the great purpose.

We may, for the sake of lucidity, classify these environmental possessions in which our consciousness and will reside into material, intellectual, and transcendental. Each of these classes we may possess or be possessed by.

(i) Our material possessions are our trade, our money, our clothes. A man cannot live without these structures which the social law has imposed upon him as necessary to the performance of his various functions. But he may work for the work's sake and that the world may be better for his work, and that thus his true wage may be earned ; or he may work with only the wage in view. In either case his trade is his possession, though in the former he owns it, and in the latter it owns him. His money, too, is his own ; but it possesses him if he works for its increase beyond the work's due and neglects the power it gives him of helping needier neighbours struggling with their environment. A man's clothes, houses, and pictures are also his possessions though he uses them either as a means of life or considers them a reason for living. If one is ever in doubt as to whether this or that possession is his slave or his master, he has but to ask whether the thing enlarges his environment or restricts it, whether, that is, it brings increase of

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(ii) Intellectual
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houses being stored with treasure, its counting-houses are busy with exchange. We use these intellectual riches always that we may gain more ; and rightly so, if these treasures extend our lives into the lives of our fellow-men, give us strength to take the burden of their ignorance upon our own shoulders, give us hope in understanding and holding fast on to those possessions that form our transcendental environment. Nevertheless, our intellectual riches may possess and enslave our souls almost as surely as the money, which we kill the very life in us to win. If we judge our fellow by his academic scholarship, we are as essentially snobs in the eyes of the eternal justice as if we judge him by his bulging pockets or sartorial perfection. A man may as surely, though not quite so despicably, I think, be a slave to his knowledge as to his pecuniary investments. Knowledge is not even wisdom. A man may grow great fields of wheat and never eat their bread. A bookworm may be a great scholar without knowing or speaking truth. There be successful painters who are no lovers of nature, and well-advertised singers may live for applause and care little for music. So may a man have great intellect and use it, not for the kindling of wisdom in his own and the people's heart, but for the adulation of the learned societies. Such are no more justified in their life than is Cræsus in his.

(iii) Of the transcendental environment it is

harder to speak, because of the almost ineradicable tendency in this day of exalted intellectuality to see "with not through the eye." Though this transcendental atmosphere lies more immediately about man than any other of his possessions, he speaks of it as a thing far away. It is the most real among things because it is the power beyond as well as within that calls life into being and inspires it. It is the essential life: one with the universe, revealing obligation, our personal success, social altruism. No facts are there that this spiritual environment, and therefore is intellectually unknown. Still less is there any experimental evidence of Man's ability to draw upon its fund. But we can yet say this, that those whom some of us count greatest because of their noble influence in the world would have us believe that they get renewal of life by passing beyond the environment of factual experiences and obligations and asking for that which is given. Nor is it only those who pray who draw upon the eternal fund of life, for some there be whose whole life is an unconsciously uttered prayer. Beyond begging for more of the talents with which Man is equipped for his journey, there are ways of holding on to the infinite. And the chief of these is the intercourse with neighbours' hearts. For one point is clear about this essential power of life, if it be, indeed, the moral law as pronounced in the Sermon

on the Mount : that the vital law is not bound or defined by the laws of numbers or mechanics or physical forces or mundane utility. In the law of vital energy one subtracted from two does not leave one ; on the contrary, it leaves three or more. The two small fishes may be divided among a multitude and each receives not an atom of flesh or bone, as must, in a material sense, have been the case, but his bellyful. So that if, when one shares his last crust with a fellow-beggar, he goes hungry on the way, we may know that, in giving of his love (and without love no gift brings increase), he is enlarging his own life in the eternal. It is indeed in such ways that a silent prayer is often unconsciously uttered by the needy : that such prayer does not ascend unanswered we have good reason for believing, though never what the learned call proof. That which is so mighty that it is necessarily true cannot be weighed in our puny scales. What would be our respect for Truth if it could be expressed as an algebraical solution of the unknown quantity, or were susceptible of precipitation from the co-mingling of two chemical solutions ? To be sure of the efficacy of prayer we dare not even desire the evidence of science ; we dare not measure the Well of Life with a wooden bucket, though the deeper we dip the better we may know. That which is true must be tried and trusted, though the trust must not wait for the trial. The great environment of the Divine Love, which besets us



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even wherever we try to escape it, is reached by all through the hearts of their fellows, and by some, perhaps in greater measure, who go straight to the fountain head.

We have yet to understand two most important things in the extension of individual life into the world surrounding its manifestations in the flesh. Because of a certain dimness of vision, we often fail to realise the simplicity of truth and dismiss as paradoxical that which we cannot understand. But there are no such things in the heavens above nor the earth beneath nor the waters under the earth as paradoxes; they are but the limitations to our growth we have chosen to accept. We wall even our minds about with the rules of dimensions and forget that in vital law dimensions exist not for limitation, but for expansion.

The two things of our environment which, I say, we must consider because their appearance of paradox tends to oppose our belief in the perfecting purpose of the law, are Luxury and Penury. The first baffles us because we do not understand how, it being natural in all men to desire prosperity and its concrete embodiments, their attainment should prove so disastrous; and the second makes us discredit, if purpose there be in the law, the integrity or consistency of a system so arranged that while adversity in the environment is so obviously beneficial to some in augmenting their strength, want and

excessive hardship prove so disastrous to others. Yet, I repeat, there is no paradox in the law, nor can be without the eternal being divided against itself.

(a) ON LUXURY

But, before proceeding to attack the problem of luxury, I am going briefly to recount the story of an extinct monster, for it will show how in Natural Law and the process of Evolution we find reason for our conceptions of ethical obligation.

Much has been said of the huge reptiles that inhabited sea and land when vegetation was still cryptogamous, like that of the earlier coal-fields, and before mammals and leaved vegetation had appeared. Opinions vary as to how and why these monsters have become extinct. Those that lived on the land like the ugly megalosaurs, or that flew like the horrible pterodactyls, may have perished because the food-supply somehow became insufficient; but it is not likely, considering their size and the thickness of their hides, that they were exterminated by forms of life surviving them. Possibly they succumbed to disease. But of all these monsters, the ichthyosaurs were perhaps the most dreadful. Their structures, from the point of view of self-protection, could hardly be bettered, while the fact that they frequented the sea and lived upon flesh proves that they were fleetier than their prey and

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surmounted all inconveniences of their heavy armour. Even their eyes were protected by dense bony plates, while the size of their pupils and the enormous width between their eyes prove their great range of vision. The power of their swimming tail and the awful size of their jaws must have made them alike the envy and terror of all inhabitants of the sea. A socialist would probably claim that they personified the great ideal of success in those days as truly as some men, who differ from the ichthyosaurs chiefly in the misfortune of not yet being extinct, are now worshipped for their money and the many things that encase them !

How then should these ichthyosaurs ever become extinct ? That it was not due to any change in the environment making life no longer supportable is proved by the fact that other contemporary species, such as the shark tribe, have survived almost unchanged to this day. As long as there were fish in the sea the ichthyosaurs could never have starved ; as long as they had their powerful swimming tails they could never have been caught by enemies, even if we could imagine any creature bold enough to attack them. That their food was superabundant and their greed phenomenal we know from the evidence of their passing through their bodies large quantities of fish wholly undigested ; while the presence of small ichthyosaurs inside the fossil remains, though formerly taken as evidence

that these reptiles were viviparous, proves their gluttony. But whatever the species died of, whether of a ruined digestion or of grief for the offspring they devoured, at any rate the ichthyosaurus was a supremely successful person. Nevertheless, it became extinct, while its prey persisted.

The ichthyosaurus, I think, died of prosperity and luxury. Its success destroyed it because there remained nothing more for it to contend with in its environment, its food practically swimming into its crocodilian maw. Luxury killed it, because there was no possibility of its enemies attacking its armour, because its environment failed in its duty of harassing its comfort, because it lived for its greed. Its concern in fulfilling the law of life, that commands life to live only in increase, became inoperative ; and I strongly suspect that, so self-contained did its miserable existence of success become, that it gradually grew effete, failing even to breed. And the waters knew it no more.

The ichthyosaurus's perfection of structure, hedged in with armour, making attack impossible, stands in striking contrast to the nakedness of Man. Man, born without clothes, with the thinnest of skins, with teeth insignificant and talons more ornamental than necessary ; slow of foot as compared with the deer, dull of sight with the eagle, of hearing with the horse, of scent with the dog ; Man has come and has survived, and may yet advance. The very perfection of the

ichthyosaur led to its undoing, while the imperfection of man's limbs and senses have necessitated the marvellous brain-development that makes him king of the earth. Despite his weakness of vision, he sees farther than the eagle, because he has learned to understand and control what he sees. The ichthyosaur lived for itself in obedience to the numerical law of mortality ; while Man is learning to live in the body and blood of his environment, in virtue of the law of life ; that in giving to others he grows, in taking that which is the birthright of his neighbour he dies. If this is the reason of these reptilian monsters' extinction, the history of the species' rise and fall is closely analogous to the lives of many men, and would, if our race were ever represented solely by the prosperous and luxurious, be repeated in the extinction of the human kind. Even if it proved that the ichthyosaurs died of starvation, or because altered conditions in their environment otherwise made life impossible, we may still take this solution of the question as substantially true. For, if the environment had come to offer insuperable barriers to their existence, it was because their easy circumstances had unfitted them for contention with changes in the world that other species could surmount. If they died of hardship, the hardship was the talon-grip of the demon luxury which they had fostered so tenderly.

In the further discussion of luxury we find a difficulty in the fact that the word *luxury* is so lax

in meaning. For notwithstanding the fact that luxury, in the ordinary sense of the word, is but damnation made comfortable, we are compelled to admit that labour-saving things do work for Man's good. So we need a special definition of the word *luxury*. By it we may indicate the possession of environmental privileges beyond what are necessary for the due performance of the work in accordance with its purpose in relation to the man serving and him who is served. The carpenter's common tools, we may say, are environmental privileges and are not luxuries, because they are necessary to the doing of his work. But the specially fine tools of the higher craftsman, though perhaps not immediately necessary, are justified because they enable him to do work that transcends in beauty and strength the common kind. Such fine tools would be luxuries if they were not necessities. Good work must always involve the bettering of work, and the bettering of work may necessitate an increase of ease in the help of the mere tools. But if mechanical facilities merely enable a capitalist to be idle at the expense of the craftsman's soul, by transforming the latter's capacity for creative work into the degradation of tending a machine he does not understand, such luxury brings disaster to master and man alike.

! All good work involves growth; and luxury may yet be commendable if it facilitates Man's efforts to extend his life in its environment. But

it is unworthy if its possession leads merely to contentment with the limitation of dimensions, and thus arrests the diviner man's innate desire to win freedom from his chains by so ordering his life and labour that every man whom he touches shall be the gainer also.

We must look at this question of luxury from the natural standpoint, untrammelled alike by the excuses of the voluptuary, or the condemnations of the ascetic, or the toleration of the comfortable. Luxury offers us conditions alike of merciful ministration and of terrible disaster. And we must admit fully the ministration, though to do so may look, at first sight, like questioning the truth taught by all truly great teachers that simplicity offers the better way.*

Luxury may, then, be sought in good purpose or with evil intent. But even when sought in good purpose it may bring disaster, and make us question if men were not better while living the life of the Veddas or of the early Christians. How far we may consider the acquisition of luxuries as

* In estimating the dangers of a comfortable environment, it must not be forgotten that it is chiefly upon improved soil and protection that the gardener relies for producing new varieties and improvements. Ease in winning material needs would seem to set free the power of control and creation in other directions. Similarly if the gardener wishes to fix a variety, and prevent further departure, he deliberately impoverishes the soil ; so that the plants, compelled to work harder for necessities, have no energy left free for improving upon the parental type. Such facts in no way controvert the dangers of luxury.

right, we may best understand by putting two questions. The first is : By what means do we acquire our luxuries ? The second is : To what purpose do we put them when acquired ?

(i) No right transaction, whether with men or with Nature, benefits one side alone. In husbandry the earth is no less benefited than the peasant. In forestry the woods gain in strength while the feller of trees wins his livelihood. Even in the chase, the species hunted grow fleet of foot although the individuals pay the penalty. In commerce both buyer and seller profit by their dealings. And the converse is no less true in all dealings between man and man ; if one gain because the other loses, the transaction between them is sanctioned only in the market of Hell, where gamblers and cannibals are the pillars of society. But let us be more particular.

Among the industries of our environment we find weavers of soft carpets. An inherited love of ease makes us prefer walking upon grass to dusty roads, and on thick pile carpets to bare floors. Both our natural desires and our kindly environment invite such luxury. The question then arises, if we think of purchasing a carpet, what are the means at our disposal ? On the one hand, we may have earned its price by our own work, and we may buy the carpet with a right sense that, as we have been paid well for our labour, the weaver shall be well paid for his, for thus his earnings will strengthen his natural

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desire to make strong and beautiful carpets. In such transaction both buyer and seller are equal gainers; they are mutually indebted to one another, and trade becomes a means of extending individual existence into its right human environment. On the other hand, if, because the weaver's need is great, we offer him such a price as he must take to appease his children's hunger; such price as makes him sick at heart and weary for lack of the rest that is his due; such price as destroys in him all sense of rightness in quality and beauty in design—then we are using means for the purchase of the carpet which are not legitimate, for the means we use to acquire the weaver's carpet are the wages of the weaver's work; and we are robbers. "Oh, but," says Cræsus, "he is not compelled to sell; and I cannot afford the price that will give him what you call a living wage. He had better sell at my price, or even at a lower, than let his children starve!" Is it indeed necessary to explain to this fat soul that he may buy a smaller carpet at full price, and that the inconvenience he will suffer from his boards being barer will be more than balanced by his possession of a better carpet and a better conscience, and by the bettered lives of the weaver and the weaver's children? But Cræsus will probably repudiate such altruistic reasoning. He will tell us that he has plenty of coverings for his floors, but needs a bigger carpet to keep up the appearance he is bound to

consider because of his influence in the city. And he brings us to our second question, to what purpose do we use our luxuries ?

(ii) It is right for the horse to desire the grass rather than the high-road, because, though grass be a luxury, it enables him to go fast and far with less work and fatigue. But if, the purpose of his desire being right, he nevertheless makes the grass serve as an apology for unearned rest, he prostitutes his purpose, he is grown luxurious, and the amenities of his environment lead to his undoing and downfall. As we have ample justification for believing that a man's best labour is the rendering of service to others, we may summarise his relations to the comforts and clover of life in this proposition : whenever he has desired the ease of material content that it may, by setting him free of fatigue, bring an augmented effort to bear upon work due to self, family, or community, his motive is just ; whenever, moreover, having duly paid for his luxury in true estimation of the work rendered, he immediately makes it a means of further extending his life and his possessions into the lives of his fellows, so that they profit by his life and his possession ; when he does not allow this luxury to become a reason for existence ; then is man fulfilling his destiny.

The question, as to how we use the privileges of ease that we have won, brings yet others in its train. How, we may ask, if the desire for soft

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walking is right and natural in a horse, has it wrought much mischief in Man? No right thing can bring disaster if used rightly; it is the wrong motive in desiring, the wrong means of winning, the prostitution in use, that makes havoc of human life.

But then, we ask again, if the dangers of luxury are so universal, how is it that we have not taken to heart the penalties of its misuse and learned to shun it? How is it, in all these myriad years of experience in evolutionary education, we still inherit and bequeath an instinct to acquire the superabundant comforts of life?

No instinct will be found to be inherently bad if traced to its true use and principles; though, to find an original service in some bad passions we may have to travel back into forgotten ages of our evolution. The finest impulses of our nature may be prostituted in use; yet there is no elemental power of action in us but may be put to noble purposes. We hold in ourselves nothing that is foreign to our nature, nothing that cannot serve in strengthening the divine intent which rules all things into being. Even the amoeba in its selfishness fulfilled the first steps in the Law's need of the creature's evolution; but man is something more than amoeba. Man, partaking of the same essential life as the amoeba's, retains its virtues; though its virtues are such that, when once outgrown, they may be profitable

only as obstacles for surmounting. There is no paradox in the law that proclaims a right method for the amœba and a righter method for man. In evolution whatever is, is right and consistent with eternal law until something better becomes possible. And Man has attained this point in the evolution of consciousness and will ; that all things he does to extend his environment may be done with determination that his personal purpose shall be consistent with the idea he dimly sees to be dominant in the eternal law.

At first sight the fact that we can instinctively seek a right thing with a wrong motive, or acquire it by wrong means, or put it to base use, seems to argue an inherent sinfulness in human nature. It looks as though Man must instinctively prefer the luxurious life of an ichthyosaur to the simple life of a Tolstoy, or he would not degrade his privileges. But the desire for ease in life is not in itself a proof of inherent sinfulness. This search for ease to better work, this craving for those pleasant things that contribute to rightly earned rest, have probably been amongst the strongest of the many forces assisting in Man's evolution. Consequently the desire for luxury may be normal and ethically right, even though often opposed to a righter desire for more strenuous energy. Right instincts may rightly strive with each other for mastery ; both will yet be right so long as the righter overcomes. There can be no true

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system of morals contrary to natural law. The Integral Truth must be the inspiration of all things, whether in the creation of beast or in the education of Man.

And yet we must insist upon the need of simple living. The more life is simplified, as regards the things necessary to subsistence, the freer is Man to hold means, material or otherwise, for the extension of his energy into wider domains. Thus in a sense simplicity becomes luxury. The ever-increasing complexity of the social fabric will steadily grow in the revelation of beauty and the fulfilment of the eternal Purpose, when the energy of each individual among the life-threads that weave the fabric is simple in its own unsullied purpose. Simplicity of personal life is in no way inimical to complexity of knowledge or breadth of domain. It is not incompatible with the holding of many means. Indeed, simplicity gives freedom to possess.

Is this argument a paradox? Hardly. If we remember the conclusions reached in comparing the structureless amœba with the much-machined man, we shall understand that no paradox is offered. The amœba, it was argued, would think that Man had elaborated his complications only for the ease they would bring him; and from the point of view of the amœba's limited understanding it would be right. Man, doubtless, has ordered his structures that he may have ease from the labour of personally super-

vising the mere exchange of food and work between his body and the fields of produce beyond ; but this is for the definite purpose of giving himself greater personal freedom to extend his life into environment. The energy of man's life, being freed from drudgery, spends itself in pushing into wider worlds of knowledge and of understanding ; up into those precincts of the eternal, the hearts of men ; out beyond his limitations to find the unknown consummation of his hoping.

We seek ease and luxury, even as our ancestors have ever sought them in bygone periods of evolution, in right desire to win freedom from our chains. But we attain freedom only as far as it leads to an ever-increasing effort to be freer, and in obedience to the eternal law of life. And this law commands that we give others the wonderful things we have earned for their true germination and bearing of fruit.

It has indeed become Man's part to take conscious share in the purpose of his evolution, because he has discovered the high office of Will. And his Will may labour for the increase of the environmental body with sense of the Ideal Purpose, or it may prostitute the divinity of its origin to the base life of an ichthyosaur. Man may surely desire even a thing that becomes evil if put to an evil use, so long as he keeps it right by putting it to right use. The most complex life conceivable remains simple so long as all its privileges are won and expended in such ways as shall be

determined by the love of the fellow-man and sense of God's honour. To live the simple life is to live in obedience to the precepts of the Sermon on the Mount. To think that the first essentials of the better life are won by discarding the conveniences of modern life, or by entering a monastery, is to mistake the letter of the law for its spirit. Nevertheless, the only possible first step may lie in going and selling all that he has, before one may come out of the dungeon.

The danger and disaster of luxury are no new factors in evolution, as I have already hinted. The environment is for ever offering excess of ease and hardship; the capitulation to one and conquest of the other have been the reasons respectively for degeneration or growth. The fittest will always survive, while the unfit bring death to the inherent nobility of purpose and energy. The whole history of the wide-ranging class of parasites, comprising many forms of life, amœba-like and losing power of movement, worm-like and losing power of digestion, hermit-crab-like and losing power of self-protection, man-like and losing power of right living in freedom, all declare the ethical law of their evolution. Man alone has understanding of this law, and he knows that, even when he accepts things and possessions for the help they may give, he is employing servants that, if he does not use them aright, will become his master. He will ever control the structures he erects for his work's doing, or

become first an automaton and finally a parasite upon the workers to starve them.

But how comes it, we shall yet again be asked, that man of all animals desires that which so readily proves contrary to the law of his increase? Because, in a word once more, he has power of choice to advance in energy, or to sleep at ease.

In the language of the present day, he has choice between materialism and growth in spiritual increase. Sloth and stupidity are akin. And the pursuit of materialism, we shall find, everywhere manifests itself in the stupid substitution of the semblance of things for the real nature of things. We know the nature of things, after all, solely by their appearances. We know of law only by its manifestations. We know of spirit only through its embodiment and manifestation in matter. And yet, silly knaves that men be, they mistake the material for the essential, even when the material be dead and merely painted by themselves into a semblance of life. The worshipper of Mammon, no less than the worshipper of God, has in him the inherent desire for increase in life; but the purse-fed man, he who prostitutes his life to the service of that which he was born to overcome, viz., his environment, counts the mere symbol of increase as the increase itself. He mistakes his money for the good of life, and hugs the mortality to which he is chaining himself. He mistakes his

food for a thing to be sought because of the ease it will bring, rather than as a means to increase of human energy. He mistakes the body for the soul, the substance of the wave for the spirit moving over the waters. Desire for the increase of possessions is normal and right and good, yet it is only the meek and obedient who inherit the earth. And it is the tendency to stupidity and slothfulness which people worship the letter of the law, not its spirit, or the symbols of the law, which are used as easy substitute for the renewal of the spirit, which their use should inspire, if we are to use them for ritual. Half, if

not all, the sin in the world arises from the mistake of the outward and visible signs for the inward and spiritual grace. And this false use is not devoid of ethical responsibility, seeing that it is born of an attempt at compromising between the vital energy that is demanded of man and the easier way of mortality. All men have an inherent desire for increase in the energy of life, for it is the law of their divinity. But some are satisfied with the base signs of this increase, and are content to accept the adulation of fellow-men, who are not the less idolators that they cringe before a material success they have not attained. All men desire to fulfil the law of their nature. But it is easier to obey the material letter than the divine spirit; we can do the one at our leisure, while the other needs perpetual increase

in effort ; and something, perhaps, of kneeling. Because it needs less energy to lie on soft carpets than to give the footsore and weary their dues, Cræsus still desires fine carpets, though he pays for them out of the weaver's pocket. He, inheriting the instinct of increase that is entirely commendable, looks upon the things that are bought and sold, the mere body-forms or symbols of the essential spirit that should vivify them, as in themselves desirable. He cannot see that actually they are worthless except as tokens of the holy interchange of service between him who needs and him who makes, or as a means of fulfilling the laws of life that bring human increase. Gold may bring numerical increase ; it draws to itself other pieces of gold as the crystal draws molecules out of solution and deposits them on itself. But the real vital power increases only in obedience to this fundamental law of life, that only by giving can we grow. Thus it is that Cræsus, the ichthyosaur, in sacrificing his life for his luxuries, sacrifices to a graven image, the god of which destroys him. Thus it is that the Christian, sacrificing himself for the eternal produce of love, offers sacrifice to that God who gives him increase in his disciples' salvation.

(b.) ON PENURY

Yet a few words must be said about penury of the environment. Here we must hold our

faces sternly to certain terrible facts, that often, in the eyes of even the wise, but always in the eyes of the despondent, seem to deny our right to believe in an eternal beneficence.

It is easy enough to understand that obstacles are the very means by which we gain strength for surmounting them. This must be the belief of even the narrowest-minded of evolutionists, though they may not be interested to ask whence comes and what means this inherent energy of life that brings strength to overcome. So readily do we admit the advantages in having difficulties to face, that all instinctively recognise the principle that Man excels only in overcoming. Indeed, it is natural law. Nevertheless, though most understand that their environment would be but a grim travesty of their needs if it provided them no fields for conquest, people commonly spend a great portion of life in bewailing the particular environment with which they are beset. Even those who most surely desire to work and live in accordance with what they believe to be the divine intent, frequently say: "Ah! what work could I not do if but this or that circumstance of my life were different; if I had been born wealthy, if society did not turn such deaf ears to my schemes for its reform, if I could only get a hearing or hire a pulpit!" The ubiquitous complaint is that we lack the very opportunity and privilege which we waste our energies in evading. But would men choose their own environment,

and select their own difficulties? If they could, would they choose the hardest, or those interfering least with their imagined happiness? The sort of dragons most would select for keeping their armour bright would be soft-feathered and gentle-eyed birds of paradise. A pretty sort of scholar the school would turn out which allowed each boy to choose his own lessons! This every one will admit to be true: yet not the less do many most justly blame their circumstances as being too hard for them. The difficulties and barriers are often, indeed, seemingly insurmountable; worse, they crush multitudes.

Our environment is our body. Part of it consists of structured organs that no effort of will nor grief at their mastery of our lives can alter, not even though these organs be diseased and at warfare with their function. But part of this environmental body, no less surely, consists of organs over which we have perfect command to make them slaves or masters. And again, a still larger environment extends beyond our present use for conquest and control; and the means of such conquest are often the very circumstances that we rail at because they are parts of our wayward structure. Yet these circumstances, if we put them to no uses, may become weapons of offence in the hands of the enemy.

To every man who looks on at the battle

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waging about him and takes small or no part in its urgings, such environmental weapons of offence must indeed look unconquerable. To such a one it might look better to cease from fighting, notwithstanding the truly awful price of peace. But to the man who fights, even though he himself perchance must die before the victory be won, the enemy can be overcome only by scorning their boasted invulnerability. To this man no obstacles are too great, though his arms are wrested from him, though his clothes are torn from him, though his life-blood is flowing from him. He knows the adversary with whom he has to contend, his own strength and weakness. The tragedy of his brother's life may look as if it would be insuperable and death-dealing were it his own; he can but resist his own enemy and give perhaps a helping hand to his needier brother. 'Tis the onlooker, and not the one who fights because the love of his fellow-soldier makes him share his danger, who cries, "Peace! no matter the price! We must eat or we die." The true fighter would rather die defeated than listen to the words of the craven.

Indeed, no man knows the strength of his neighbour: he cannot measure it by the size of his own task. Nor can he understand how large a first step may lie in the giving of a cup of water to a thirsty child; neither can he gauge in others the relative smallness of a crime against the laws of state and society. Virtue has never yet been

gauged by its material reward, nor sin measured by its mundane penalty. Though we can help our brother, we can never know the true soreness of his wounds nor the nobility of his feeble energy. The offer of a cup of water may be, on its side, a greater act of militant merit than the lighting of Latimer's candle ; and the life of the prostitute, on the other side, may be a smaller deterrent to salvation than the rich man's belief that God has favoured his increase.

Perhaps from no one is taken the life that may yet spring into possibility. The tender orphan, driven into foul means of subsistence, is still not bereft of the possibilities of God's love, even though the only way left be the leap into the river. If the horrors of the environment into which our flesh and blood, our sisters and children are born, with the taste of gin in their baby mouths, the filth of life as their children's food, the beatings and worse as their daily portions ; if these horrors seem, to us who stand and look, insuperable barriers to our belief in God's love, there is nothing for us, if we would understand, but to go into the cesspool and cleanse it. And I have yet to learn that any man or woman who gave his or her life in such work has come through it disbelieving in the love of God. To the lowest prostitute there sometimes comes a merciful hatred of her life, if only in rare moments when the energy of life is not drowning in drink. If we

are to have strength to serve, we must believe that the eternal life that came from God is in these outcasts but sleeping, itself unsoiled by the horrors that hide it from our eyes. The spiritual power is potential in all life, though it is not yet become kinetic in manifestation. The life of the seed is the eternal life of God, and its individual energy cannot wake to its germination till the weight of the environmental soil, heavy with human sin, is lightened. And there can be no other work in this world for those whose seedling souls are inspired by sense of their possible fruition, who have found mercy and beneficence in their superincumbent soil no less than in the light of the sun, the baptismal rain, and the inspiration of the winds ; there can be no other work, for these, than to give what is asked, and to go down even into the sewers of human iniquity, that they may help into life the eternal possibilities of the Infinite Love.

Yet what have we gained by all this theorising ? All our philosophic reasoning upon the relation of spirit to matter, of function to structure, of the power of life over physical forces, do no more than show us that nothing in nature can be explained except by belief that life is essentially an ethical strife after growth, a victory over mortality : by a belief, indeed, that we dare not pretend to see an end to the Purpose in life. All our investigations in science and strivings after wisdom bring us back to the simplest of ideas,



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grasped as well by the good child as by the truthful philosopher ; that the Love of God is the soul and energy of the universe. Given knowledge of this, and the heart of Man is at peace with his desires.

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